Figure 1

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ITAGATGCCCTCTTTGTTCTCTTTGAAGAATGCAGTCAGCCTGCTCTGATGAAGATTAAGCACGTGAGCAACTTTGTCCCGGAAGTGTATTCCGACATAG GCTCAAGTGGAAGAAATGAGGTTGATGATGAATCAGTTGGAAGAGGATCTTGTCTCAGCAAGAAGACGGAGTGATCTCTACGAATCTGAGCTGAGAGTC TGCCATCCTTTCTCTCTAAAATTGACTGGAACAACATTCGTAACTCTCCCCCCCTTCGTTCCCACCCTCAAGTCTGACGATGACACTCCAATTTTGATGA GATGGAGGTGTCCCAGGAGGATGACAAAGCACTGCAGCTTCTCCATGATATCAGAGAGCAGAGCCGGAAGCTCCAAGAAATCAAAGAGCAGGAGTACCAG <u> AAACTGGAGAAGATCAATGCTGAGCAGCAGCTCAAAATTCAGGAGCTCCAAGAGAAACTGGAGGAAGGCTGTAAAAGCCAGCACGGAGGCCACCGAGCTGC</u> A GCTGA GGAA CGCCGCCATTCTCTGGAGAA CAA GGTAAA GAGACTAGA GACCATGGA GCGTAGAGAAAA CAGACTGAAGGATGACATCCAGACAAAATCC TTTACCTGGAGACACAGGCTGGGAAGTTGGAGGCCCAGAACCGAAAACTGGAGGAGCAGCTGGAGAAGATCAGCCACCAAGAGCCACAGGTGACAAGAATCG CAGGAGCGCGAGTCACAGTTGACAGCCCTGCAGGCTGCACGGCCGCCCTGGAGAGCCAGCTTCGCCAGGCGAAGACAGAGCTGGAAGAGACACAGCACA AAGCTGAAGAGAGAGCCACTCACGGCACTTAGAGATGAAATCCAGCGCAAATTTGATGCTCTTCGTAACAGCTGTACTGTAATCACAGACCTGGAG ACTGGGGATTCTTGGTAGATCTGAGTCTGTTGTGTCGGGTCTGGACTCCCCTGCCAAGACTAGCTCCATGGAAAAGAAACTTCTCATCAAAAGCAAAGAGCT ACGTGCACCATGCTGGAGGAACAGGTCATGGATTTGGAGGCCCTAAACGATGAGCTGCTAGAAAAAGAGGGGCAGTGGGAGGCGTGGAGGGCGTCCTGG GGGCGGAACAGATCGCAGACCTGGGGGTTCGCAGAGCCGCCAGTGGGGAGATGTTGAAGTTCAAATATGGAGCGCGGAATCCTTTGGATGCTGGTGCTGCT GAACCCATTGCCAGCCGGGCCTCCAGGCTGAATCTGTTCTTCCAGGGAAACCACCCTTTATGACTCAACAGCAGATGTCTCCTCTTTCCCGAGAAGGGATA CTGAGTTACAGGAGCTCCAGCCTTCGGCAAAGGACTTCGAAGTCAGAAGTCTTGTAGGTTGTGGTCACTTTGCTGAAGTGCAGGTGGTAAGAGAAAAGCA ACCGGGGACATCTATGCTATGAAAGTGATGAAGAAGAAGGCTTTATTGGCCCAGGAGCAGGTTTCATTTTTGAGGAAGAGGAAGACGTATTATTTCGAAG GAATAGATATGAGGACCAGTTAGATGAAAACCTGATACAGTTTTACCTAGCTGAGTTTTTGGCTGTTCACAGCGTTCATGTGGGATACGTGCATCG AGACATCAAGCCTGAGAACATTCTCGTTGACCGCACAGGACACATCAAGCTGGTGGATTTTGGATCTGCCGCGAAAATGAATTCAAACAAGATGGTGAATG CCAAÀCTCCCGATTGGGACCCCAGATTACATGGCTCCTGAAGTGCTGACTGTGATGAACGGGGATGGAAAAGGCACCTACGGCCTGGACTGTGACTGGTGG ACCAGAGAAGAATTCGTGGGTTTCATCCTCTCCGTGCCAGCTGAGCCCTCAGGCTTCTCGGGTGAAGAACTGCCGTTTGTGGGGGTTTTCGTACAGGC AGGAGGAGCCCATGAGAAGGCCAAAATTCTCAGCGAACAGAGGCGATGATCAATGCTATGGATTCCAAGATCAGATCCTGGAACAGAGGATTGTGGA GTGATGAGAAATCCCAGTTTGAGTGTCGGGTTCGAGAGCTGCAGAGAATGCTGGACACCGAGAAACAGAGCAGGGCGAGAGCCGATCAGCGGATCACCGA
 TCAGTGGGCGTGATTGCCTATGAGGATTATGGGAGATCCCCTTCGCAGAGGGAACCTCTGCCAGAACCTTCAATAACATTATGAATTTCCAGCGGTTT
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GTCCACAGTATTTGGAAAAGGTCACTGAAAATGGGTCTTTCAGTCTTGGCATTTCATTTAGGATCTCCATGAGAAATGGGCTTCTTGAGCCCTGAAAATGTATA GGCAAGCTAACTCGCGGCCTTATTTCTGCCTTTAATCTCCCACAAGGCATCTGTTGCTTTTGGGTCCTCCACGACTCTTAGGCCCGCCTCAACAACCAAGGCAC CTGGCCTGCATCCCAGCTCCTTCCTGCTCGTGTCTTAACCTAAGTGCTTTCTTGTTTTGAAACGCCTACAAACCTCCATGTGGTAGCTCCTTTGGCAAATGTCCT CTCCTAGGTAGGCTCAAAGGTAGACCCGTTTCCACCGCAGCAGGTGAACATGACCGTGTTTTCAACTGTGTCCACAGTTCAGATCCCTTTCCAGATTGCAAC TACAGGCTTTTTCTTCATTACCTTTTTTTTTTTTTTGAGAACGAGGAAGAGAACACAAGGAATGATTCAAGATCCACCTTGAGGGAATGAACTTTGTTGTTGAACA ATTAGTGAAATAAAGCAATGATCTAAACT

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IGCTGTTTGACGCCCCTGACCTGAGGCTCAGCCCGCCCAGTGGGGCCCTCCTGCAGGTCCTAGATCTGAGGGACCCCCAGTTCTCGGCTACCCTGTCCTGGC A GCGCCGCA TCCGTGA GCTGCA GGCA CCTGTGCA GA GCCTGGGGCTGCTGGGGA GCCGGCTA TGTGTGGGCGCCGCCGCGGTGGCTTTGCA CTCTA CC CAGAAGCAGCAGCGCAGGGAGATGCTGAAGGACCCTTTTGTGCGCTCCAAGCTCATCTCGCCGCCTACCAACTTCAACCACCTAGTACACGTGGGCCCTGCC CACCCACTGCCAACACACCGCTCTACAGAAGGTCTTCCTGCTAAGGGATGGGGCATGGGGCCTGGGAGGCCTTGGGTAATGGCTGTCCCCCTCCCCAGCCG CTCAAGGAGGCTTACGACAACGGGCTGCCGCTGCTGCCTCACACGCTCTGCGCTGCCATCCTCGACCAGGATCGACTTGCGCTTGGCACCGAGGAGGGGCTC AA CGGGCCGGCCCGGCCCAGGGACAA GTCCCCGTCCCA GCCCCTCCGCA CTGTCACCCAA CAGGCTCCCGAAGAGAGAGAGGGCCGAGTTGCCCGCGGGCTCCGG CCCACAGGGGCCCCACAGCTTCTCCGAGGCGTTGCGGCGCCCCAGCCTCCATGGGCAGGGGAAGGCCTCGGTGGAGACGCAGACCCCACTGGAGCAGTGAAGA GGAAACCCTGGACATCCCTGTCCAGCGAGTCTGTGTCCTGCCCCCAGGGATCGCTGAGCCCTGCAACCTCCCTAATGCAGGTCTCAGAACGGCCCCGAAGCC A GAA GGGA A GAA GGAA GGAA GGAA A GGAA GGAA GGA GGA GGA GAA CAA GGAA GAA GCTCACACACGCTGCGCCCCCCGGAGCTTCCCATCCCCGACCAAGTGTCTCCGCTGCACCTCGCTGATGCTGGGCCTGGGCCGCCAGGGCCTGGGTTGTGATG GCACAGGCACTGCCTATGAGGGCTTTCTGTCGGTGCCGCGGCCCTČÁGGTĠTCCGGCGGGGGCTGGCAGCGCGTGTTTGCTGCCCTGAGTGACTCACGCCTGC GGCAGAGAGCGAGGGGGAGCGGGAACGCTGGCTGCAGGTGCTGGGTGAGCTGCAGCGGCTGCTGCTGGACGCGGCGGCCAAGACCCCGGCCCGTGTACACA CGCTGCTCAACGAGGCTGCGCCGTTGGCGCTGGGGGCCGGTTTGGTGCCTGAGGAGCTGCCACCCATCCCGCGGGGGCCTGGGTGAGGCACTGGGTGCCGTG GAGCTTAGCCTCAGCGAGTTCCTGCTACTCTTCACCACTGCTGGCATCTACGTGGATGGCGCAGGCCGCAAGTCTCGTGGCCACGCGAGCTGTTGTGGCCAGCA A GGTCTTATCTGTGGACTGTCTGACTCCCA GCTGA GGCCAAGA TGGGGCA TGTCCCCGTCTCTGCTTA GCGTCTGGGTGA GAAAAA CA GGCTGTGA TCCAGA GACCCTGGCATCTCAGGAGAGGCCACAAGGCATGGAGGAGAGCCAGATCTGAGGCCGGAGGGCCGACGCCAGCCTGCGCATGGGGGCTGTGTTCCCCAGAG CCTGCGGCTACTTTTGTCACACACCTGTGCCCCACAGGCCCCACACGGCTGCCCGTGCCCCTGACCTCCTCCGCACAGGCCTGGGAGTACACCCGAAACAG
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A TGTGCTTGA TGA GGAAGGCGGCCGGTCA CCCCGCCTCCCGA CCCCGCTCTCGCA GTCTCA GCCCGGGCCGTGCAA CGGGGACCTTCGA CAA TGA GA TTGTCA A GCCCGTCCCTGCTGGGTCCCA GCAGCCCCTGCAGCCCCTGTA GCCCCTCGTTGGGCCTGCACCCCTGGA GCTGCCGCA GCGGGAACCGCAA GAGCTTGGTG TGA TGA A TCA CGTG TA CCGGGA GA GGTT CCCCA A GGCCA CA GCA CAGA TGGA GGCCCGTCTGCA GGA GTT CCTGA CGCCCTA CGCGCCCGGCCGGCTG GTACCCCGCCACAGAGGCGGCCTCTGCCTCGGCATGAAGTCCCGCAGGGACAAGCTGCACATCCCGGCGCTGACCCTCGATCTGTCTCCCGAGCAGCAG CTGCCCTAAATTTCCCCTTTGCCCGGAGGGCAGAGGTGGTCCCTCGCGTCTCTCCCATCTTCCGGCTATGGAACCAACACACCCAGCTCCACC TCTCGTCAAGCTCATCCTCCCGGGAACGTCTCCACCAGCTTCCAGCCGACGCCGGACGACGAGCTGCCACTTCCTGTCCAAGCACTTCCGCAGCTCAGAGA

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 CCTGGGGTTTTGGGGAGCGCCGTGTCCTATGAGGACAGGGAGGAGGAGGCTCAAGCCTGGAGGAGGAGGACAGATGAGGGTGATGACAGCAAAAGTGGTG
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ATTATAAACTITATGATGTAGAAACCAAATATGGTTTGCTTCAGGTTTCTGAAGGATTGTCATTGTTGTGATAGCATGGTGAAAATGGTGCATGGAAATATCAC TGAAAAACGCTTTGATACCAAGAATTAAAAATGCTTGTCTACAAACATCTTCCCTTGCGGTTCGTGTAAATTCATTAGTGTGCTTAGGAAAGATTTTGGAATA AGTITITICAAAGGACTGCCAAAGGTTCTACCAAAACTGCCCAAGCGTGTCATTGTGCAGAGAATTTTGCCTTGTTTGACTTCAGAATTTTGTAAACCCTGACAT GTACTGTTACAAAAGTAACAGCTGATGTCACTAGTGCTGTAATGGGAAATCCTGTCACTAGAGAATTTGATGTTGGTCGACACATTGCCAGTGGTGGCAATG TCCTGAAAATATATAATTTTGAATAAAAGTGGAGCCTGGAAAATAATGGGTTTTTGATTTTTGTGTATCATCAACCAATCCTTCTGAACAAGAGCCTAAATTTCCT CAGTTCAATTCTTTCATTTCCGTCATAAAAGAAATGCTTAATAGATTGGAGTCTGAACATAAGACTAAAACTGGAGCAACTTCATAAATGCAAGAACAGCAG ATCAGTTGAGTCGTTTAGGATCTAGTTCACTTACAAATATACCTGAGGAAGTTCGTGAACATGTAAAGCTACTGTTAAATGTAACTCCGACTGTAAGACCAG CTACCCATGGTTTACAGAGCACTAGAAGCTCCTTCCATTCAGATCCAGGAGCTCTGTCTAAACATCATTCCAACCTTTGCAAATCTTATAGACTACCCATCCA GCGGCCGCGGGGGCGCGGAGGATATGGAGTAAAGCCAGAGTCAGTGGCCAGGCACGAAGGCAGAGGCAGGAACAGCCAGGAGGCGGTTTATTAGGGGGGC GAAAAGGATCAAATCATTGATTCTCTAAAACGAGGAGTCCAACAGTTAACTCGGCTTCGACACCCTCGACTTCTTACTGTCCAGCATCCTTTAGAAGAATCC AGGGATTGCTTGCCATTTTGTACAGAACCAGTTTTTGCCAGTTTAGCCAATGTTCTTGGTAACTGGGAAAATCTACCTTCCCCTATATCTACAGACATTAAAGG CAGGAGCCAATCCAGGCTAGCAACATGATTTTGTTAATTTTCCTACAAAAATGGATTTGCTACTAACCAAAAACCCCTCCTGATGAGATAAAGAACAGTGTT ACACACTGATGGATAATATGTCATCCTTGACCAGCCTTTCTGTTAGTACCCCTAAATCTTCTGCTTCAAGTACTTTCACTTCTGTTCCTTTCCATGGGCATTGGT
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CGGCGCGCGCGCCGGCCGGCCGGAGTTGCCTCCCGGGGCCCGGGGCCTGAGGGCCCGCCGCCGCCGCCGCCGCTGCTGCTTGCGCTTTGCGCTGTTGCCGC IGCTGCCCGCGCCTGCCGCCCCCCCCCCCCCCCCGCGCCCCCGGAGCTGCAGTCGGCTTCCGCGGGGCCCCAGCGTGAGTCTCTACCTGAGCGAGGACG TTGACAGTAAATTCTTCAAAAAATTTTACCGTCTTAAATTTTAAACGAAGGAAAATGTGCTACAAAAAACTTGAAGAAGTAAAAACTTCAGCCTTGGACAAA CAGGAAGAAGGTGCCTGTCGGGGCTCACTTGAAGCCTGTCAGGGATGCTTTGTATCTAACACAACAGCAACAGAAGCACATTTGTCTTCCAGAACACGGTGC TTCTGTTCAGGGGGAAGTTCCACGCACTTTATCAGTGTTTCGGGTAGAGCTTTCCTGTACTGGCAAAGTAGATTCTGAAGTTATGATACTAATGCAGCTCAAC CTATTCAGATTGCCTGTGGAATGAGCTACCTGGCCAGAAGGGAAGTCATCCACAAAGACCTGGCTGCCAGGAACTGTGTCATTGATGACACTTCAAGTTA AGGTGCGCCGGCTGATCGGTCTTGATGCAGAACTTTATTATGTGAGAAATGACCTTATTAGTCACTACGCTCTATCCTTTAGTCTGTTAGTACCCAGTGAGAC CTTACATGAATTGGGGGAATCTTAAAATTGTTTTTACGACAGTGCAAGTTAGTAGAGGCCAATAATCCACAGGCAATTTCTCAGCAAGACCTGGTACACTGG AGATCACAGACAATGCCCTCTCCCAGAGACTTGTTCCCCATGGACTATCACTGTCTGGGGGACAATGAAAACAGGCCAGTTCGTTGGATGGCTCTTGAAAGTC ATCCAGAGAGGCCCAAGTTTCAGCAGCTGGTACAGTGCCTAACAGAGTTTCATGCAGCCCTGGGGGCCTACGTCTGACTCCTAATCCCAATCCCACAT AAATTTCCTGCACTTCACCTGGCATGCGAAGTTCCAAGGTTGAATATAAGCTGGGATTCCAAGTGGACAATGTTTTGGCAATGGATATGCCCCAGGTCAACAT TAGCAATAATATTAGCTGTTTTGCACCTTCATAGTATGAAAAGGATTGAACTGGATGACAGCATTAGTGCCAGCAGTAGTTCCCAAGGGCTGTCTCAGCCAT CCACCCAGACGACTCAGTATCTGAGAGCAGACACGCCCAACAATGCAACTCCTATCACCAGTTATCCTACCTTGCGGATAGAGAAGAACGACTTGAGAAGT ITTCCATGGGATTTTAATAGATGAAAAAGATCCAAATAAAGAAAAACAAGCATTTGTCAAAACAGTTAAAAGATCAAGCTTCTGAAATTCAGGTGACAATGA TGGTTAATAACGAGTTCTCTAGCGCTAGTGATGTGGGCCTTTGGAGTGACGCTGTGGGAACTCATGACTCTGGGCCAGACTCCTACGTGGACATTGACC CCTTCGAGATGGCCGCATACCTGAAAGATGGTTACCGAATAGCCCAGCCAATCAACTGTCCTGATGAATTATTTGCTGGATGGCCTGTTGCTGGGCCTTAG AACACTAGCAGAACTATTTATGATCCTGTACATGCAGCTCCAACCACTTCTACGCGTGTGTTTTATATTAGTGGGGTTTGTTGTTGTGCAGTAATATTTCTCG ATTITITIGGCCAAAATTITITIAAAAACATACTTIGGACTAGGGGTACATTCTTACAAAATAAATAAACAGTTTTTAAAATTAGAATTGTTTAGACACAGATATTTG

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CCAACCGGGAGGAGTGTGCCCGCCTCAACGCCTCCCTCTCCTGCCTCAGGAATGTCCACATGTCAGGAGGCAACCTTTCCAAACAAGACTGGACCATCCAGT <u> ATGGĜAĜCTĜCAGĜCCAGATGCAGGCTTCCTCTGACTAGGGCACAGCTGCTGCTGCAGGAAAGGAGGAGGAGGGAAGGGGGATTGCAGAGCAAGCGATGG</u> CCCCGCCACTGGAGTCGGGCCACCGTTCCCTGCCCCATCGCCCCGGCAGCGGCACGCGGTCCGCACCCCGCCGCGCGCCCCCAACATCGTCACCACGTG GGCAGCTGTCCTGCAAAAAAAAGGTAGCCTTGCAGGAGCGCAACGCGGAGCTGGACGGCTTCCCCCAGCTACGGCACTGGTTCCGAATCGTCGATGTGCGC GGCCCACCACAGAGAGGGGAAGGAGAACAATCCCGTGTGCCCCCCGGAGCCCACCCGTGGATCCGCACCCATCTCTCCCAGAGCCCCAGGGTCCCGTCC AAGTGCGTCCAGCACTATTGTCACACCACCCCACTCCCGGGGCCCCTGTGTACACCCCACGTGGACAGGCTTACCGTGGACGCCTACCCGGGGCTTGTGCCCG ACCCCGCCGGCCACGCCCCATGAGGAAGAAGAACAAGCTGAAGCCCCCCGGGGGACCCCCACCGCCTCCTCCCGAAAACTGATACACTTGATCCCGGGATT AAGGAGGTCCTGGAGAAATCTCCCCCGGCCAGCTGAGCCTGGAGGACCTCTTGGAGATGACGGATGAACAGGTGTGCGAGACTGTGGAGAAATACGGAG ATGAGGAAAACATGACGAAAAAGCGAGGAGCAGCCTCTGAGTTTGCAAAAAGCCTTACAGCAGTGCGAACTGGTCCAAAACATGATAGACTTGAGGCAT

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CAGATGCTCAGCATCCAGGACAACAGCTTCATCAGCCTCAGCTGCAGCGCATCTTTGAGCGGGTCCGCCAGAGCGCCGACTTCATGCCCCGCTGGCAGATG GGGCCTGCTGAGGGACGGGACGGAGGTGGCCGTGAAGATCCAGTACCCCGGCATAGCCCAGAGCATTCAGAGCGATGTCCAGAACCTGCTGGCGGTACTCA IGTGCCCAGAATTTCAGGCAGCTGCTGGCAAATGACCCCTTCTTCCGGGTCCCAGCCGTGGTTAAGGAGCTGTGCACGACACGGGTGCTGGGGCATGGAGCTG GGTGGTTCTGGGCTGGACTCCAGCCCCTTCCTGTCGGAGGCCAATGCCGAGTGGCGGATTGTGCAGACCTTATGTACAGTTCGAGGGGCCGCCCTCAAGGTTGGC GCCGCTTGGCCAACTTTGGGGGGACTGGGCTGTGGGGCTTGGGGGCTAGGAGTACTGGCCGAGATGGCTAAGAAGTCCATGCCAGGAGGTCGTCTGCAGTCAGAG CTGAGAGTTCTTGAAGAGGAGCTCGGCAGGGACTGGCAGGCCAAGGTGGCCTCCTTGGAGGAGGTGCCCTTTTGCCGCTGCCTCAATTGGGCAGGTGCACCA A GATGA GCGCGCGCCCTGCCCGCGGGCCTGTTTGCCGAGCAGAGCCTGCAGGCCTTGCAGCAGGAGCTGGCTTGGGAGTGTGACTACCGTCGTGAGCGGCCT CCTTGTGGGGCCCTGGGGCCCCACCGCTGGGGACCATGTGGAGGTTCTTGGGCCCCAAAAGTTTTACCAGGATGGGCCTGGGAGGCCTGGGTGA

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ITTTAAGAGAATTAGTGAAACATAAACTCATAGCTTGGGAGCGTACCAAAACTGTCCAGGGCTATCGGTTGACAAATGCAGGATATGATTACCTAGCTTTGA CCAATGCTGAGTGGTATTTTGACAGAGATGTTAAAATGCATTAAAGATTTCTTTATGAAACGTTTCAGCTACGAAAGTGAGCTTTTTCCAACTTTTAAGGATAT AATTACAACAGGCAAGATGGTCAGAGAGTTCAAGGAGGAGTCCCTGCTGGCTCTGACGAGTATGAAGATGAATGCCCTCATCTAATTGCCTTGTCGTCATTA TTGAAATGACTGAATTCAATCAAGCTTTAGAAGAAATAAAAGGGCAGGTTGTTGAAAAACAACTCTGTAACTGAATTTTCTGAGGAGAAAAACAGAACTGAA ATGGAACTCATAAATGGTTATCCACTATGTCAGATACACCATGTTGAAGATCCTGCATCAGTATATGAAGCTATGGAACTAGTAATTGTCAAACTTGCAAAT AAAATATTGAAACAAAAGAGGGATCTGAATTCTCATTTTCAGATGGAGAAGTGGCAGAAAAAGCAGAGGGTTTACAGGTCAGAAATGAAAGTGAAACGGAA AATAGAGAATTCAGGCCTTTCAGAGATGAAGAAATGTGGGAGCTATGAATCAGTATAGAACAAGAACTGGAGTATCAGTTCTTCAGGCAGTGCTGTAAG GCTITIGCGGCTGTCGTCGGAGAGGCATCTGGGTTCGGACTGGGGCCGCCATGGGGAAAGTGAATGTGGCCAAGTTGCGTTACATGAGCCGAGATGACTTCA AAACACTTTCTTAGGCAAGTAGTTGAGTCTGTTGGAAACCAGATGGGTGTTGGCAAAGAATCAGATATTTACATTGTTGCAAATGAAGAAGGACAACAA TCTCGTCTCTCTGCCATGAAGGAATTTGCCTATATGAAGGCATTGTATGAGGGAAATTTCCAGTTCCAAAGCCAATTGATTACAATCGTCATGCAGTGGTC CATGGGCTGATTCATGGAGATTTTAATGAATTTAATCTCATTTTGGATGAAAGTGACCATATCACCATGATTTTCCACAGATGGTTTCAACTTCTCATC CTGTTCAACAATTCCTCCAGAACTGGTGAAACAGAAGGTGAAACGTTCAGTTGACAAAACAGCAAAAAATCAGCTGTCAGACGTCGATTGCAGAAAGGAGAA

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GCCCCCCAAGAAAGCGAATGAGAAAACAGAGTCATCCTCTGCACAGCAGTAGCAGTGTCACGCCTTAGCGCTTCCAGCTCCAGCTCAGATTCCAGCTCCTC AGCCTGTGGGAAAGACAAAGGAGAACTGGCTTTGGAGAAAAAGCGGGAATTAGAAAAGCGGTTACAAGGTGACAGGTCAGCGGACAGCTCAATTCTACAAAAA AGGGACATTTACTGAAGGAGGGACATGGACAAAACAACATTGAATTCCCAGCCCCATTGGGGAGTGATCTCTTGGACACAGAGCCCCCATTCAAAATGGGG ITITITICTACTCTGTTTTCCCTTTTCCTTCCGCTCCATTTGGGGCCCCTGGGGGTTTCAGTCATCTCCCCATTTGGTCCCTGGACTGTCTTTGTTGATTCTAAC AGATTGATTTTGAAACACTCCAGGCCATCCACACTTAGAGAGCTTGAGCGCTATGTCCTTTCCTGCCTACGTAAGAAACCCCGGAAGCCCTACACATTAAGA $\tt CTCTTCCTCGTCGTCGTCTTCAGACACCAGTGATTCAGACTCAGGCTAAGGGGTCAGGCCAGATGGGGCAGGAAGGCTCCGCAGGACCGGACCGGACCCTAGACC$ **ITGTAAATAAAGAAAATATT**

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>ZC1 H SEOID#NA 66

TGA CGGCCGGCCCCGCGCCA TGGTGTGA GCGCCGCCGCCGTGCA CGCTCCGTCCGCCCTCCCGCGGCGGCCGGCCGGCCGGCA GAGAGCCCCGAGGGCCCGAG GCTGAGATACACAGAGCGACAGAGACATTTATTGTTTTTTTGGTGGCAAAAAGGGAAAATGGCGAACGACTCCCCTGCAAAAAGTCTGGTGGACA ICGACCTCTCCTCCTGCGGGGATCCTGCTGGGGATTTTTGAGCTGGTGGAAGTGGTTGGAAATGGCACCTATGGACAAGTCTATAAGGGTCGACATGTTAAAA

AACTCATACGGAAGCATTTGGAACAAAATACAAAGGAACTAAAAGCATCTCAAGAAAATCAGAGGGATCTTGGGAATGGATTGACTGTAGAATTCTTTTCA

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CATCTGGTGATAGTGACACCAACGATGTTAGAATCTGAATGTCAAGCTCCTGTACAGAAGGATATAAAAGATTAAAGAATGCAGATTCATGGAAAAGTTTAGGC

CAACTITGATTAAAACTCAGTITITTAAATTAACCATCCACTTAAAATGAATGGTAAAAGATCAAAATGCATATGGTAAAATGATTGCTTTCAGATAACAAGA

TACAGTTGACCAAAAAGCGTGCCAGCCATCATGAGAGCAATGGCTTTGCCGGTCGCATTCACCTCTTGCCAGATCTCTTACAGCAAAGCCATTCCTCCACT 3GGGCGGAGAAATACGTTCATAGGCACTCCCTACTGGATGGCTCCTGAGGTCATCGCCTGTGATGAGAACCCAGATGCCACCTATGATTACAGAAGTGATCT TCTTCGCCGAGATTTCCTGAGACTGCAGCAGGAGAACAAGGAACGTTCCGAGGCTCTTCGGAGACAACAGTTACTACAGGGAGCAACAGCTCCGGGAGCAGG AGCACACTCCAGAAACACAAATCTTCCTCCTCCTTTTACACCTTTTTATAGACCCCAGATTACTACAGATTTCTCCATCTAGGGAACAACAGTGACATCTGTGG CCTGATGCTGCTGGACAGAAGTGGCCAAGGGAAGGTCTATCCTTTATCAACCGAAGACGATTTCAACAAATGGACGTACTTGAGGGCTTGAATGTCTTGG ACCCACACTCTATGATCCAGTGTAGCATCAAACCCCATGCAATCATCCTCCCCCAATACAGATGGAATGGAGCTTCTGGTGTGTATGAAGATGAGGGGG CCCCGGCTGAAGTCAAAAAAATGGTCGAAGAAGTTTTTAGTTTTATAGAAGGGTGCCTGGTGAAGAATTACATGCAGCGCCCTCTACAGAGCGCCATTTTG GTGGATCTGACCGCACTGGCCAAAGAGCTTCGAGCAGTGGAAGATGTACGGCCACCTCACAAAGTAACGGACTACTCCTCATCCAGTGAGGAGTCGGGGAC GGTGAAACGGAATCTGTGAAAACCATGATTGTCCATGATGTAGAAAGTGAGCCGGCCATGACCCCATCCAAGGAGGGCACTCTAATCGTCCGCCAGAG GGACAACCGTAGGGGATTTGGAAGGATGTGTACATTATAAAGTTGTAAAATATGAAAGAATCCAAATTTCTGGTGATTGCTTTGAAGAGTTCTGTGGAAGTCT ITIGETCITIGTGGCATTACAGCCATTGAGATGGCAGAAGGTGCTCCCCCTCTCTGTGACATGCATCCAATGAGAGCACTGTTTCTCATTCCCAGAAACCCTCCT GAAGCTAGAAGGCAGCAGGAACGTGAACAGCGAAGGAGAGAACAAGAAGAAGAAGAGGGCGTCTAGAGGAGTTGGAGAGAAGAAGGAGAAGAAGAAGAAGAGGA GCTTCCATGCTCCCGAGCCCAAAGCCCACTACGAGCCTGCTGACCGAGCGGAGAGAGGTGGAAAGATTTAGGAAAACTAACCACAGGCTCCCCTGAAGCC CAGTCTAAGCAGACAGGCAGAGTATTGGAGCCACCAGTGCCTTCCCGATCAGAGTCTTTTTCCAATGGCAACTCCGAGTCTGTGCATCCGCCCTGCAGAGA GACGGATGAGGAGGACGACGATGTGGAGCAGGAAGGGGCTGACGAGTCCACCTCAGGACCAGAGGACACCAGAGCAGCGCGTCATCTCTGAATTTGAGCAAT IGGGGAGAAAGGCCATAGAGATCCGATCTGTGGAAACTGGTCACTTGGATGGTGTTCATGCACAAAAGGGCTCAAAGGACTAAAATTCTTGTGTGAACG GACCTIGTGAAGAACACCAAAGGGAACACACTCAAAGAAGACTGGATCGCTTACATCTCCAGAGAAATCCTGAGGGGACTGGCACATCTTCACATTCATCA GAGGAGACGGGCAGAAGAAGAAGAGGAGGAGGTTGAAAGAGAACAGGAGTATATCAGGCGACAGCTAGAAGAGGAGCAGCGGCACTTGGAAGTCCTTCA CCAGCGGAGCCACAGGTACAGTGGTCCCACCTGGCATCTCTCAAGAACAATGTTTCCCCTGTCTCGCGATCCCATTCCTTCAGTGACCCTTCTCCCAAATTTG AAACATCCTTTATAAGGGATCAGCCAAATGAAAGGCAAGTTAGAATCCAGCTTAAGGATCATATAGATCGTACCAGGAAGAAGAGAGGGGGAAAGATG A GGCTTGGTCTAGATCAGACAGTGACGAGGTGCCTCCAAGGGTTCCTGTGAGAACAACATCTCGCTCCCCTGTTCTGTCCCGTCGAGATTCCCCACTGCAGG AGTGACACCCCGGAGATTCGTAAATACAAGAAGAGGTTTAACTCTGAGATTCTGTGTGCTGCCTTATGGGGAGTGAATTTGCTAGTGGGTACAGAGAGTGG GACAATATCTGGCAAAAAGGATAAGTTACGTGTCTACTATTTGTCCTGGTTAAGAAATAAAATACTTCACAATGATCCAGAAGTTGAGAAGAAGAAGCAGGGAT ITTATGTAAACACATATGGAAGGATCACCAAGGATGTAGTTCTACAGTGGGGAGAGATGCCTACATCAGTAGCATATATTCGATCCAATCAGACAATGGGC AACATTGCAACATATTATGGTGCTTTCATCAAAAAGAGCCCTCCAGGACATGATGACCAACTCTGGCTTGTTATGGAGTTCTGTGGGGCTGGGTCCATTACA TGGCAGTGGCAGCTCCTCAGGGTCCAGCAACTCAGGATCCCAGCCCGGGTCTCACCCTGGGTCTCAGAGTGGCTCCGGGGAACGCTTCAGAGTGAGATCAT

GGGAGTTTCCCTTTTCTAAAAATGCAATGCACTAAAACTATTTTAAGAATGTAGTTAATTCTGCTTATTCATAAAGTGGGCATCTTCTGTGTTTTAGGTGTAAT GGTGGTAAAAGAAGCAGAGTGCTGAAGCAGAGCAGATTTAATATAGTAACATTAACAGTGTATTTAATTGACATTTCTTTTTTGTAAACCTGACGAGATG GCTTGGCTTGCTGCAGCTCCAGGCACCCCGGTGGCACTCTGGTGGTGTTTGTGGTGAACTGAATTGAATCCATTGTTGGGCTTAAGTTACTGAAATTGGA AGCTTGATGCAGGGACCCAGTGAAGTTTCTCCGTTAAAGATTGGGAGTCGTCGAAATGTTTAGAATTTTTAGGAAAGGAATTATTTTCCCCCCTTTTACAGG GCTCTTCCAAAACAAAAATGTCTCTAGGTTTAGTCAGAGCTTTCACAAGTAATAACCTTTCTGTATTAAAATCAGAGTAACCTTTCTGTATTGAGTG GGTGGGGTGGGTTAAGGGGTCCCATTTTGTTTCTTTGGATTTGGGGTGGGGGTCCTGGCCAAGAACTCAGTCATTTTTCTGTGTACCAGGTTGCCTAAATCAT AAAAAA TTCAAACCACATGTTTATTTTTTTTTTGCCTACCTCATTGTTCTTAATGCATTGAGGGGTGATTTAGTTTATATATGTTTTTGGAAGAAACCATTAATGT
 FTAA TITTAATCITAATACCAAAACGACCAGATTGAAGTTTGACTTTTATTGTCACAAATCAGCAGGCACAAGAACTGTCCATGAAGATGGGAAATAGCCTTA
AGGCTGATGCAGTTTACTTACAAGTTTAGAAACCAGAATGCTTTTTACCAGATTCACCATTAGAGGTTGATGGGGCAACTGCAGCCATGACAAGA ACAAAAAAAAAAGGGGTGTTTCATTGGAATTACCAAGTGCTTAGAACTTGCTGGCTTTCCCATAGGTGGTAAAGGGGGTCTGAGCTCACACCGAGTTGT GTAGTAACTTCTCCACAGAAGTGCCAATATGGCAAAATTACACAAGAAAACAGTATTGCAATGACACCATTACATAAGGAACATTGAACTGTTAGAGGAGT CCTITIGIGGTIAATITITCCIGTATATIGIGAAAATGGGGGATTTTCCCTCTGCTCCCACCCACCTAAACACAGGGGGGTTTGTACCTGTTTGCTTCCCATCCC CCACTCATGAATGCAGACACAGCAGCTGGTGTTTTGTGTATACCTGTAAAGACAAGCTGAGAAGCTTACTTTTTGGGGAAGTAAAAAAAGAAGTGGAAATGG GCCACAGTGAACACTCGTGTACATATCAAGAGAAGAAGGAAAGGCACAGGTGGAGAACAGTAAAAGGTGGGCAGATGTCTTTGAAGAATGCTCAATG AGTGTTTTTTACCCTTTTTCCCATGCACATGTTACGTTGGAGAAATGTTTACAAAATGGTTTTGTTACACTAATGCGCACCACATATTTATGGTTTATAAA ATTAAATTTACTAATTATAAAAGCTGCAAAGCAGACTGGTGGCAAGTACACAGCCCTTTTTTTGCAGTGCTAACTTGTCTACTGTGTATTATGAAATTACT AATTCCTTGTCTCTGAATGACTCTGTCTTGTGGGGTGTCTGACAGTGGCGACGATGAACATGCCGTTGGTTTTATTGGCAGTGGGCACAAGGAGGTGAAGT CGTGTGACAGTATTAGCACTGCCTCAGTTAAAGGTTTAATTTTTTGTTTAAACCTAGACGTGCAACAAAAGTTTTACCACAGGTCTGCACTTGCAGAAGAAGA TCTCATTGTTCTCGATGTAGAGGGGTTGGTAGCAGACAGGTGGTTACATTAGAATAGTCACACAAACTGTTCAGTGTTGCAGGAACCTTTTCTTGGGGGTGG TGAGAAAGAATTTCATGGCTTCATGGTCATCACTCAGGTCCGTAAGGATATTACCGTCTCAGGAAAGGATCAGGACTCCATGTCACAGTCCTGCCA TCTTACTITICCTCTTGTCGAGTTCTGAGTGGAAATAACTGCATTATGGCTGCTTTAACCTCAGTCATCAAAAGAAACTTGCTGTTTTTTAGGCTTGATCTTTTT A TOTTICA TITIGIA TGA GITTIGGA GCCAGTGCTGA A GCCGCCTA CTGGTTTGTA GTTA A CCTAGA GAA GGTTGA A A A TTAA TCCTACCTTTAA A G TCTGATGCTAAGTGGGAGAAGGCAGAGAACAAAGGATGTGGCATAATGGTCTTAACATTATCCAAAGACTTGAAGCTCCATGTCTGTAAGTCAAATGTTAC CAATGACAAGGTGTTCTTTGCCTCTGTTCGGTCTGGTGGCAGCAGTCAGGTTTATTTCATGACCTTAGGCAGGACTTCTTCTGAGCTGGTAGAAGCAGTGT GATCCAGGGATTACTGGCCTCCAGAGTCTTCAAGATCCTGAGAACTTGGAATTCCTTGTAACTGGAGCTCGGAGCTGCACCGAGGGCAACCAGGACAGGTG GCTGCAATGCAGCTGGTGCTGTTCAGATTCTACCATCAGGTGCTATAAGTGTTTGGGATTGAGCATCATACTGGAAAGCAAACACCTTTCCTCCAGCTCCAG ACTIGGCACCCACTCTGACCTCTIGTCAGTTTCCTGTTCCTGGTTCCATCTTTTTGAAAAAGGCCCTCCTTTGAGCTACAAACATCTGGTAAGACAGTACAT GTTGTCCCCCCACCCTTTTTTCCTTAAATAAAAAAAATGACACCTA

Figure 2

CRIK H SEOID#AA 67

LGILGRSESVVSGLDSPAKTSSMEKKLLIKSKELQDSQDKCHKMEQEMTRLHRRVSEVEAVLSQKEVELKASETQRSLLEQDLATYITECSSLKRSLEQARMEVSQE REA OVSA OHLEVHLK OKE OHYEEKIK VLDNOIKKDLA DKETLENMMORHEE EA HEKGKILSE OKAMINAMDSKIRSLE ORIVELSEANKLAANSSLFT ORNMKA O IMLEEQVMDLEALNDELLEKERQWEAWRSVLGDEKSQFECRVRELQRMLDTEKQSRARADQRITESRQVVELAVKEHKAEILALQQALKEQKLKAESLSDKLND NNKRGQQGWDRKYIVLEGSKVLIYDNEAREAGQRPVEEFELCLPDGDVSIHGAVGASELANTAKADVPYILKMESHPHTTCWPGRTLYLLAPSFPDKQRWVTALE EEMISELROOKFYLETOAGKLEAONRKLEEOLEKISHODHSDKNRLLELETRLREVSLEHEEOKLELKROLTELOLSLOERESOLTALOAARAALESOLROAKTELE ETTA EA EEEIQAL TAHRDEIQRKFDALRNSCTVITDLEEQLNQL TEDNAELNNQNFYLSKQLDEASGANDEIVQLRSEVDHLRREITEREMQLTSQKQTMEALKTTC RRLKERMHINIPHRFNVGLNMRATKCAVCLDTVHFGRQASKCLECQVMCHPKCSTCLPATCGLPAEYATHFTEAFCRDKMNSPGLQTKEPSSSLHLEGWMKVPR MLKFKYGARNPLDAGAAEPIASRASRLNLFFOGKPPFMTOOOMSPLSREGILDALFVLFEECSOPALMKIKHVSNFVPEVYSDTIAELOELQPSAKDFEVRSLVGCGVHLMGYVHRDIKPENILVDRTGHIKLVDFGSAAKMNSNKMVNAKLPIGTPDYMAPEVLTVMNGDGKGTYGLDCDWWSVGVIAYEMIYGRSPFAEGTSARTFNNI LKIQELQEKLEKAVKASTEATELLQNIRQAKERAERELEKLQNREDSSEGIRKKLVEAEERRHSLENKVKRLETMERRENRLKDDIQTKSQQIQQMADKILELEEKH LEKKHAMLEMNARSLQQKLETERELKQRLLEEQAKLQQQMDLQKNHIFRLTQGLQEALDRADLLKTERSDLEYQLENIQVLYSHEKVKMEGTISQQTKLIDFLQA KMDQPAKKKKVPLQYNELKLALEKEKARCAELEEALQKTRIELRSAREEAAHRKATDHPHPSTPATARQQIAMSAIVRSPEHQPSAMSLLAPPSSRRKESSTPEEFS SVVAGGRVSREKAEADAKLLGNSLLKLEGDDRLDMNCTLPFSDQVVLVGTEEGLYALNVLKNSLTHVPGIGAVFQIYIIKDLEKLLMIAGEERALCLVDVKKVKQ SLAQSHLPAQPDISPNIFEAVKGCHLFGAGKIENGLCICAAMPSKVVILRYNENLSKYCIRKEIETSEPCSCIHFTNYSILIGTNKFYEIDMKQYTLEEFLDKNDHSLAP AVFAASSNSFPVSIVOVNSAGQREEYLLCFHEFGVFVDSYGRRSRTDDLKWSRLPLAFAYREPYLFVTHFNSLEVIEIQARSSAGTPARAYLDIPNPRYLGPAISSGAI MNFQRFLKFPDDPKVSSDFLDLIQSLLCGQKERLKFEGLCCHPFFSKIDWNNIRNSPPFFVPTLKSDDDTSNFDEPEKNSWVSSSPCQLSPSGFSGEELPFVGFSYSKA HFAEVQVVREKATGDIYAMKVMKKKALLAQEQVSFFEEERNILSRSTSPWIPQLQYAFQDKNHLYLVMEYQPGGDLLSLLNRYEDQLDENLIQFYLAELILAVHS DDKALOLLHDIREOSRKLOEIKEGEYOAQVEEMRLMMNQLEEDLVSARRRSDLYESELRESRLAAEEFKRKATECOHKLLKAKDOGKPEVGEYAKLEKINAEQQ YLASSYQDKLRVICCKGNLVKESGTEHHRGPSTSRSSPNKRGPPTYNEHITKRVASSPAPPEGPSHPREPSTPHRYREGRTELRRDKSPGRPLEREKSPGRMLSTRRE RSPGRLFEDSSRGRLPAGAVRTPLSQVNKVWDQSSV

>DMPK2 H SEQID#AA 68

MERRLRALEQLARGEAGGCPGLDGLLDLLLALHHELSSGPLRRERSVAQFLSWASPFVSKVKELRLQRDDFEILKVIGRGAFGEVTVVRQRDTGQIFAMKMLHKW LLCRQEERLGRGGLDDFRNHPFFEGVDWERLASSTAPYIPELRGPMDTSNFDVDDDTLNHPGTLPPPSHGAFSGHHLPFVGFTYTSGSHSPESSSEAWAALERKLQC LEQEKVELSRKHQEALHAPTDHRELEQLRKEVQTLRDRLPEMLRDKASLSQTDGPPAGSPGQDSDLRQELDRLHRELAEGRAGLQAQEQELCRAQGQQEELLQRL EEALCQLQEENRRLSREQERLEAELAQEQESKQRLEGERRETESNWEAQLADILSWVNDEKVSRGYLQALATKMAEELESLRNVGTQTLPARPLKMEASARLELQ RLFALAELENIEVAGAKIPESRGCQVLAAGSILQARTPVLCVAVKRQVLCYQLGPGPGPWQRRIRELQAPATVQSLGLLGDRLCVGAAGGFALYPLLNEAAPLALG EMLKRAETACFREERDVLVKGDSRWVTTLHYAFQDEEYLYLVMDYYAGGDLLTLLSRFEDRLPPELAQFYLAEMVLAIHSLHQLGYVHRDVKPDNVLLDVNGHI QEAQEREAATASQTRALSSQLEEARAAQRELEAQVSSLSRQVTQLQGQWEQRLEESSQAKTIHTASETNGMGPPEGGPQEAQLRKEVAALREQLEQAHSHRPSGK MGAVFPRAPTANTASTEGLPAKGWGMGPWEALGNGCPPPQPGSHTLRPRSFPSPTKCLRCTSLMLGLGRQGLGCDACGYFCHTTCAPQAPPCPVPPDLLRTALGV HPETGTGTAYEGFLSVPRPSGVRRGWQRVFAALSDSRLLLFDAPDLRLSPPSGALLQVLDLRDPQFSATPVLASDVIHAQSRDLPRIFRVTTSQLAVPPTTCTVLLLA ESEGERERWLOVLGELORLLLDARPRPRPVYTLKEAYDNGLPLLPHTLCAAILDQDRLALGTEEGLFVIHLRSNDIFOVGECRRVQQLTLSPSAGLLVVLCGRGPSV RLADFGSCLRLNTNGMVDSSVAVGTPDYISPEILQAMEEGKGHYGPQCDWWSLGVCAYELLFGETPFYAESLVETYGKIMNHEDHLQFPPDVPDVPASAQDLIRQ SALEAEIRAKQGLQERLTQVQEAQLQAERRLQEAEKQSQALQQELAMLREELRARGPVDTKPSNSLIPFLSFRSSEKDSAKDPGISGEATRHGGEPDLRPEGRRSLR

AGL VPEELPPSRGGLGEALGA VELSLSEFLLLFTTAGIYVDGAGRKSRGHELLWPAAPMGWGYAAPYLTVFSENSIDVFDVRRAEWVQTVPLKKVRPLNPEGSLFL YGTEKVRLTYLRNQLAEKDEFDIPDLTDNSRRQLFRTKSKRRFFFRVSEEQQKQQRREMLKDPFVRSKLISPPTNFNHLVHVGPANGRPGARDKSPSQPLRTVTQQ APEEKGRVARGSGPQRPHSFSEALRRPASMGSEGLGGDADPTGAVKRKPWTSLSSESVSCPQGSLSPATSLMQVSERPRSLPLSPELESSP

>MAST3 H SEQID#AA 69

LPSSGYGTNTPSSTLSSSSSSRERLHQLPFQPTPDELHFLSKHFRSSENVLDEEGGRSPRLRPRSRSLSPGRATGTFDNEIVMMNHVYRERFPKATAQMEGRLQEFLTA ERDILTFAENPFVVSMFCSFETRRHLCMVMEYVEGGDCATLLKNMGPLPVDMARLYFAETVLALEYLHNYGIVHRDLKPDNLLITSLGHIKLTDFGLSKIGLMSMA RSNSIGARHSTPRPLDAGRGRRLGGPRDPAPEKSRASSSGGSGGGGGGGGRVVPKSASVSALSLIITADDGSGGPLMSPLSPRSLSSNPSSRDSSPSRDPSPVCGSLRPPIVIH RSKRSRRRETQDRRKSLFKKISKQTSVLHTSRSFSSGLHHSLSSSESLPGSPTHSLSPSPTTPCRSPAPDVPADTTASPPSASPSSSSPASPAAAGHTRPSSLHGLAAKLG MKSRRDKLHIPALTLDLSPSSQSPSLLGPSSPCSPCSPSLGLHPWSCRSGNRKSLVVGTPSPTLSRPLSPLSVPTAGSSPLDSPRNFSAASALNFPFARRADGRRWSLAS EGQGIKTDLPQYIIGQLGLAKDPLEEMVPLSHLEEEQPPAPESPESRALVGQSRRKPCESDFETIKLISNGAYGAVYLVRHRDTRQRFAIKKINKQNLILRNQIQQVFV GTGGTHEVKQHPFFLALDWAGLLRHKAEFVPQLEAEDDTSYFDTRSERYRHLGSEDDETNDEESSTEIPQFSSCSHRFSKVYSSSEFLAVQPTPTFAERSFSEDREEG TNLYEGHIEKDAREFIDKQVCGTPEYIAPEVIFRQGYGKPVDWWAMGVVLYEFLVGCVPFFGDTPEELFGQVVSDEIMWPEGDEALPADAQDLITRLLRQSPLDRL WERSEVDYGRRLSADIRLRSWTSSGSSCQSSSSQPERGPSPSLLNTISLDTMPKFAFSSEDEGVGPGPAGPKRPVFILGEPDPPAATPVMPKPSSLSADTAALSHARL PPRPKTGRRKSTSSIPPSPLACPPISAPPPRSPSPLPGHPPAPARSPRLRRGQSADKLGTGERLDGEAGRRTRGPEAELVVMRRLHLSERRDSFKKQEAVQEVSFDEPQ YAPGARLALADGVLGFIHHQIVELARDCLAKSGENLVTSRYFLEMQEKLERLLQDAHERSDSEEVSFIVQLVRKLLIIISRPARLLECLEFDPEEFYHLLEAAEGHAR SSGKKYGFSLRAIRVYMGDSDVYTVHHVVWSVEDGSPAQEAGLRAGDLITHINGESVLGLVHMDVVELLLKSGNKISLRTTALENTSIKVGPARKNVAKGRMAR **EEATGLPTSVPQIAVEGEEAVPVALGPTGRD**

>MAST205 H SEQID#AA 70

QSAEKLAAALAASEKKLATSRKHSLDLPHSELKKELPPREVSPLEVVGARSVLSGKGALPGKGVLQPAPSRALGTLRQDRAERRESLQKQEAIREVDSSEDDTEEGP PKATAQMEERLAEFISSNTPDSVLPLADGALSFIHHQVIEMARDCLDKSRSGLITSQYFYELQENLEKLLQDAHERSESSEVAFVMQLVKKLMIIIARPARLLECLEFD HLHTQALTALSPSTSGLTPTSSCSPPSSTSGKLSMWSWKSLIEGPDRASPSRKATMAGGLANLQDLENTTPAQPKNLSPREQGKTQPPSAPRLAHPSYEDPSQGWLW LSGKQLLPLSSSVHSSVGQVTWQSSGEASNLVRMRNQSLGQSAPSLTAGLKELSLPRRGSFCRTSNRKSLIVTSSTSPTLPRPHSPLHGHTGNSPLDSPRNFSPNAPAH PVTEHSGEQRPKLDEEAVGRSSGSSPAMETRGRGTSQLAEGATAKAISDLAVRRARHRLLSGDSTEKRTARPVNKVIKSASATALSLLIPSEHHTCSPLASPMSPHSQ KINKONLILRNQIQQAFVERDILTFAENPFVVSMFCSFDTKRHLCMVMEYVEGGDCATLLKNIGALPVDMVRLYFAETVLALEYLHNYGIVHRDLKPDNLLITSMG HIKLTDFGLSKIGLMSLTTNLYEGHIEKDAREFLDKQVCGTPEYIAPEVILRQGYGKPVDWWAMGIILYEFLVGCVPFFGDTPEELFGQVISDEIVWPEGDEALPPDA SSNPSSRDSSPSRDFLPALGSMRPPIIIHRAGKKYGFTLRAIRVYMGDSDVYTVHHMVWHVEDGGPASEAGLRQGDLITHVNGEPVHGLVHTEVVELILKSGNKVAI FSFVPARRTDGRRWSLASLPSSGYGTNTPSSTVSSSCSSQEKLHQLPFQPTADELHFLTKHFSTESVPDEEGRQSPAMRPRSRSLSPGRSPVSFDSEIIMMNHVYKERF SERRTPPPTKRSLSEEKEAHSDGLAGLKGRDRSWVIGSPEILRKRLSVSESSHTESDSSPPMTVRRRCSGLLDAPRFPEGPEEASSTLRRQPQEGIWVLTPPSGEGVSG STTPLENTSIKVGPARKGSYKAKMARRSKRSRGKDGQESRKRSSLFRKITKQASLLHTSRSLSSLNRSLSSGESGPGSPTHSHSLSPRSPTQGYRVTPDAVHSVGGNS MKRSRCRDRPOPPPDRREDGVORAAELSOSLPPRRAPPGRORLEERTGPAGPEGKEODVVTGVSPLLFRKLSNPDIFSSTGKVKLOROLSODDCKLWRGNLASS QDLTSKLLHQNPLERLGTGSAYEVKQHPFFTGLDWTGLLRQKAEFIPQLESEDDTSYFDTRSERYHHMDSEDEEEVSEDGCLEIRQFSSCSPRFNKVYSSMERLSLL SQSSSPSSSVPSSPAGSGHTRPSSLHGLAPKLQRQYRSPRRKSAGSIPLSPLAHTPSPPPTASPQRSPSPLSGHVAQAFPTKLHLSPPLGRQLSRPKSAEPPRSPLLKRV PEEFYHLLEAAEGHAKEGQGIKCDIPRYIVSQLGLTRDPLEEMAQLSSCDSPDTPETDDSIEGHGASLPSKKTPSEEDFETIKLISNGAYGAVFLVRHKSTRQRFAMK ENSQGAQELSLAPHPEVSQSVAPKGAGESGEEDPFPSRDPRSLGPMVPSLLTGTTLGPPRMESPSGPHRRLGSPQAIEEAASSSSAGPNLGQSGATDPIPPEGCWKAQ ESECAQAVKEDPALSITQVPDASGDRRQDVPCRGCPLTQKSEPSLRRGQEPGGHQKHRDLALVPDELLKQT

>MASTL_H_SEQID#AA_71

WAVDSGGISEEHLGKRSLKRNFELVDSSPCKKIIQNKKTCVEYKHNEMTNCYTNQNTGLTVEVQDLKLSVHKSQQNDCANKENIVNSFTDKQQTPEKLPIPMIAKN MCELDEDCEKNSKRDYLSSSFLCSDDDRASKNISMNSDSSFPGISIMESPLESOPLDSDRSIKESSFEESNIEDPLIVTPDCOEKTSPKGVENPAVOESNOKMLGPPLE VLKTLASKRNAVAFRSFNSHINASNNSEPSRMNMTSLDAMDISCAYSGSYPMAITPTQKRRSCMPHQTPNQIKSGTPYRTPKSVRRGVAPVDDGRILGTPDYLAPEL LSLISSLGFNTPIAEKNQDPANILSACLSETSQLSQGLVCPMSVDQKDTTPYSSKLLKSCLETVASNPGMPVKCLTSNLLQSRKRLATSSASSQSHTFISSVESECHSSP KWEKDCQESDEALGPTMMSWNAVEKLCAKSANAIETKGFNKKDLELALSPIHNSSALPTTGRSCVNLAKKCFSGEVSWEAVELDVNNINMDTDTSQLGFHQSNQ LLGRAHGPAVDWWALGVCLFEFLTGIPPFNDETPQQVFQNILKRDIPWPEGEEKLSDNAQSAVEILLTIDDTKRAGMKELKRHPLFSDVDWENLQHQTMPFIPQPD VYLVMEYLIGGDVKSLLHIYGYFDEEMAVKYISEVALALDYLHRHGIIHRDLKPDNMLISNEGHIKLTDFGLSKVTLNRDINMMDILTTPSMAKPRODYSRTPGOV MDPTAGSKKEPGGGAATEEGVNRIAVPKPPSIEEFSIVKPISRGAFGKVYLGQKGGKLYAVKVVKKADMINKNMTHQVQAERDALALSKSPFIVHLYYSLQSANN DETDTSYFEARNTAQHLTVSGFSL

>PKC eta H SEQID#AA 72

MLYGPAVDWWAMGVLLYEMLCGHAPFEAENEDDLFEAILNDEVVYPTWLHEDATGILKSFMTKNPTMRLGSLTQGGEHAILRHPFFKEIDWAQLNHRQIEPPFRP MSSGTMKFNGYLRVRIGEAVGLQPTRWSLRHSLFKKGHQLLDPYLTVSVDQVRVGQTSTKQKTNKPTYNEEFCANVTDGGHLELAVFHETPLGYDHFVANCTLQ CFQTPDRLFFVMEFVNGGDLMFHIQKSRRFDEARARFYAAEIISALMFLHDKGIIYRDLKLDNVLLDHEGHCKLADFGMCKEGICNGVTTATFCGTPDYIAPEILQE VHKRCHHLIVTACTCQNNINKVDSKIAEQRFGINIPHKFSIHNYKVPTFCDHCGSLLWGIMRQGLQCKICKMNVHIRCQANVAPNCGVNAVELAKTLAGMGLQPG NISPTSKLVSRSTLRRQGKESSKEGNGIGVNSSNRLGIDNFEFIRVLGKGSFGKVMLARVKETGDLYAVKVLKKDVILQDDDVECTMTEKRILSLARNHPFLTQLFC FQELLRTTGASDTFEGWVDLEPEGKVFVVITLTGSFTEATLORDRIFKHFTRKRORAMRRRVHOINGHKFMATYLROPTYCSHCREFIWGVFGKOGYOCOVCTCV RIKSREDVSNFDPDFIKEEPVLTPIDEGHLPMINQDEFRNFSYVSPELQP

>H19102 H SEQID#AA 73

HQESLKPAPVLVEKPLPEWPVPQFINLFLPEFPIRPIRGQQQLKILGLVAKGSFGTVLKVLDCTQKAVFAVKVVPKVKVLQRDTVRQCKEEVSIQRQINHPFVHSLGD MLMGFCRLEEAGLVSRSIRERNCLYNWDSRFSRERRQRLGMGAVSCRQGQHTQQGEHTRVAVPHKGGNIRGPWARGWKSLWTGLGTIRSDLEELWELRGHHYL **GPYNHAADWWSLGVLLFSLATGKFPVAAERDHVAMLASVTHSDSEIPASLNQGLSLLHELLCQNPLHRLRYLHHFQVHPFFRGVAFDPELLQKQPVNFVTETQA** SWQGKRHLFIMCSYCSTDLYSLWSAVGCFPEASIRLFAAELVLVLCYLHDLGIMHRDVKMENILLDERGHLKLTDFGLSRHVPQGAQAYTICGTLQYMAPEVLSG TOPSSAETMPFDDFDCDLESFLLYPIPA

MSK1 H SEQID#AA 74

INWDDLAAKKVPAPFKPVIRDELDVSNFAEEFTEMDPTYSPAALPQSSEKLFQGYSFVAPSILFKRNAAVIDPLQFHMGVERPGVTNVARSAMMKDSPFYQHYDLD GTIEYMAPDIVRGGDSGHDKAVDWWSLGVLMYELLTGASPFTVDGEKNSQAEISRRILKSEPPYPQEMSALAKDLIQRLLMKDPKKRLGCGPRDADEIKEHLFFQK MEEEGGSSGGAAGTSADGGDGGEQLLTVKHELRTANLTGHAEKVGIENFELLKVLGTGAYGKVFLVRKISGHDTGKLYAMKVLKKATIVQKAKTTEHTRTERQV LEHIRQSPFLVTLHYAFQTETKLHLILDYINGGELFTHLSQRERFTEHEVQIYVGEIVLALEHLHKLGIIYRDIKLENILLDSNGHVVLTDFGLSKEFVADETERAYSFC LKDKPLGEGSFSICRKCVHKKSNQAFAVKIISKRMEANTQKEITALKLCEGHPNIVKLHEVFHDQLHTFLVMELLNGGELFERIKKKKHFSETEASYIMRKLVSAVS KIKKGDFSFEGEAWKNVSQEAKDLIQGLLTVDPNKRLKMSGLRYNEWLQDGSQLSSNPLMTPDILGSSGAAVHTCVKATFHAFNKYKREGFCLQNVDKAPLAKR HIMHDVGVVHRDLKPENLLFTDENDNLEIKIIDFGFARLKPPDNQPLKTPCFTLHYAAPELLNQNGYDESCDLWSLGVILYTMLSGQVPFQSHDRSLTCTSAVEIMK RKMKKTSTSTETRSSSSESSHSSSSHSHGKTTPTKTLQPSNPADSNNPETLFQFSDSVA

>YANK3 H SEQID#AA 75

MRSGAERRGSSAAASPGSPPPGRARPAGSDAPSALPPPAAGOPRARDSGDVRSOPRPLFOWSKWKKRMGSSMSAATARRPVFDDKEDVNFDHF01LRAIGKGSFG KVCIVQKRDTEKMY AMKYMNKQQCIERDEVRNVFRELEILQEIEHVFLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNVQFSEDTVRLYICEMALALDYLR

VQYVPTWSKEMVALLRKLLTVNPEHRLSSLQDVQAAPALAGVLWDHLSEKRVEPGFVPNKGRLHCDPTFELEEMILESRPLHKKKKRLAKNKSRDNSRDSSQSEN GQHIIHRDVKPDNILLDERGHAHLTDFNIATIIKDGERATALAGTKPYMAPEIFHSFVNGGTGYSFEVDWWSVGVMAYELLRGWRPYDIHSSNAVESLVQLFSTVS DYLQDCLDAIQQDFVIFNREKLKRSQDLPREPLPAPESRDAAEPVEDEAERSALPMCGPICPSAGSG

>MARK2 H SEQID#AA 76

MSSARTPLPTLNERDTEQPTLGHLDSKPSSKSNMIRGRNSATSADEQPHIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN LPDYKDPRRTELMVSMGYTREEIQDSLVGQRYNEVMATYLLLGYKSSELEGDTITLKPRPSADLTNSSAQFPSHKVQRSVSANPKQRRFSDQAGPAIPTSNSYSKKT **QSINNAENKRPEEDRESGRKASSTAKVPASPLPGLERKKTTPTPSTNSVLSTSTNRSRNSPLLERASLGQASIQNGKDSLTMPGSRASTASASAAVSAARPRQHQKSM** HPNIVKLFEVIETEKTLYLVMEYASGGEVFDYLVAHGRMKEKEARAKFROIVSAVQYCHOKFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPP YAAPELFQGKKYDGPEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLILNPSKRGTLEQIMKDRWMNVGHEDDELKPYVEP SASVHPNKASGLPPTESNCEVPRPSTAPQRVPVASPSAHNISSSGGAPDRTNFPRGVSSRSTFHAGQLRQVRDQQNLPYGVTPASPSGHSQGRRGASGSIFSKFTSKF VRRNLSFRFARRNLNEPESKDRVETLRPHVVGSGGNDKEKEEFREAKPRSLRFTWSMKTTSSMEPNEMMREIRKVLDANSCQSELHEKYMLLCMHGTPGHEDFV **OWEMEVCKLPRLSLNGVRFKRISGTSMAFKNIASKIANELKL**

>NuaK2 H SEOID#AA 77

MLCFTÄRSGTÄVAPRPGAGPVPRASALPAQPIDSPAALAHLLLAMESLVFARRSGPTPSAAELARPLAEGLIKSPKPLMKKQAVKRHHHKHNLRHRYEFLETLGKG VHRDLKLENILLDANGNIKIADFGLSNLYHQGKFLQTFCGSPLYASPEIVNGKPYTGPEVDSWSLGVLLYILVHGTMPFDGHDHKILVKQISNGAYREPPKPSDACG LIRWLLMVNPTRRATLEDVASHWWVNWGYATRVGEQEAPHEGGHPGSDSARASMADWLRRSSRPLLENGAKVCSFFKQHAPGGGSTTPGLERQHSLKKSRKEN TYGKVKKARESSGRLVAIKSIRKDKIKDEQDLMHIRREIEIMSSLNHPHIIAIHEVFENSSKIVIVMEYASRGDLYDYISERQQLSEREARHFFRQIVSAVHYCHQNRV DMAQSLHSDTADDTAHRPGKSNLKLPKGILKKKVSASAEGVQEDPPELSPIPASPGQAAPLLPKKGILKKPRQRESGYYSSPEPSESGELLDAGDVFVSGDPKEQKP PQASGLLHRKGILKLNGKFSQTALELAAPTTFGSLDELAPPRPLARASRPSGAVSEDSILSSESFDQLDLPERLPEPPLRGCVSVDNLTGLEEPPSEGPGSCLRRWRQ DPLGDSCFSLTDCQEVTATYRQALRVCSKLT

>BRSK2 H SEOID#AA 78

MTSTGKDGGAQHAQYVGPYRLEKTLGKGQTGLVKLGVHCVTCQKVAIKIVNREKLSESVLMKVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFD KDKPLSSIKADIVHAFLSIPSLSHSVISQTSFRAEYKATGGPAVFQKPVKFQVDITYTEGGEAQKENGIYSVTFTLLSGPSRRFKRVVETIQAQLLSTHDPPAAQHLSEP ALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVDAARRLTLEHIQKHIWYIGGKNEPEPEQPIPRKVQIRSLPSLEDIDPDVLDSMHSLGCFRDRNKLLQ DLLSEEENQEKMIYFLLLDRKERYPSQEDEDLPPRNEIDPPRKRVDSPMLNRHGKRRPERKSMEVLSVTDGGSPVPARRAIEMAQHGQRSRSISGASSGLSTSPLSSP YLVKKGRLTPKEARKFFRQIISALDFCHSHSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIRGEKYDGRKADVWSCGVILFALLVG RVTPHPSPRGSPLPTPKGTPVHTPKESPAGTPNPTPPSSPSVGGVPWRARLNSIKNSFLGSPRFHRRKLQVPTPEEMSNLTPESSPELAKKSWFGNFISLEKEEQIFVVI **PPPAPGLSWGAGLKGQKVATSYESSL**

>MARK4 H SEQID#AA 79

PSPAPLHPKRSPTSTGEAELKEERLPGRKASCSTAGSGSRGLPPSSPMVSSAHNPNKAEIPERRKDSTSTPNNLPPSMMTRRNTYVCTERPGAERPSLLPNGKENSSGT MSSRTVLAPGNDRNSDTHGTLGSGRSSDKGPSWSSRSLGARCRNSIASCPEEQPHVGNYRLLRTIGKGNFAKVKLARHILTGREVAIKIIDKTQLNPSSLQKLFREVR YTEPEEDFGDTKRIEVMVGMGYTREEIKESLTSQKYNEVTATYLLLGRKTEEGGDRGAPGLALARVRAPSDTTNGTSSSKGTSHSKGQRSSSSTYHRQRRHSDFCG FCGSPPYAAPELFQGKKYDGPEVDIWSLGVILYTLVSGSLPFDGHNLKELRERVLRGKYRVPFYMSTDCESILRRFLVLNPAKRCTLEQIMKDKWINIGYEGEELKP PRVPPASPSSHSLAPPSGERSRLARGSTIRSTFHGGQVRDRRAGGGGGGGVONGPPASPTLAHEAAPLPAGRPRPTTNLFTKLTSKLTRRVADEPERIGGPEVTSCHL IMKGLNHPNIVKLFEVIETEKTLYLVMEYASAGEVFDYLVSHGRMKEKEARAKFRQIVSAVHYCHQKNIVHRDLQAENLLLDAEANIKIADFGFSNEFTLGSKLDT

PWDQTETAPRLLRFPWSVKLTSSRPPEALMAALRQATAAARCRCRQPQPFLLACLHGGAGGPEPLSHFEVEVCQLPRPGLRGVLFRRVAGTALAFRTLVTRISNDL

>DCAMKL2 H SEOID#AA 80

LSDNVNLPQGVRTIYTIDGSRKVTSLDELLEGESYVCASNEPFRKVDYTKNINPNWSVNIKGGTSRALAAASSVKSEVKESKDFIKPKLVTVIRSGVKPRKAVRILLN KKTAHSFEQVLTDITEAIKLDSGVVKRLCTLDGKQVTCLQDFFGDDDVFIACGPEKFRYAQDDFVLDHSECRVLKSSYSRSSAVKYSGSKSPGPSRRSKSPASVNGT WVSDDASQENNMQAEVTGKLKQHFNNALPKQNSTTTGVSVIMNTALDKEGQIFCSKHCQDSGRPGMEPISPVPPSVEEIPVPGEAVPAPTPPESPTPHCPPAAPGGE PSSQLSTPKSTKSSSSSPTSPGSFRGLKQISAHGRSSSNVNGGPELDRCISPEGVNGNRCSESSTLLEKYKIGKVIGDGNFAVVKECIDRSTGKEFALKIIDKAKCCGKE HLIENEVSILRRVKHPNIIMLVEEMETATELFLVMELVKGGDLFDAITSSTKYTERDGSAMVYNLANALRYLHGLSIVHRDIKPENLLVCEYPDGTKSLKLGDFGLA TVVEGPLYTVCGTPTYVAPEIIAETGYGLKVDIWAAGVITYILLCGFPPFRSENNLQEDLFDQILAGKLEFPAPYWDNITDSAKELISQMLQVNVEARCTAGQILSHP MASTRSIELEHFEERDKRPRPGSRRGAPSSSGGSSSSGPKGNGLIPSPAHSAHCSFYRTRTLQALSSEKKAKKARFYRNGDRYFKGLVFAISSDRFRSFDALLIELTRS RAGTWRRHRD

>PIM2 H SEQID#AA 81

GPPAPPGTPTPPPGGKDREAFEAEYRLGPLLGKGGFGTVFAGHRLTDRLQVAIKVIPRNRVLGWSPLSDSVTCPLEVALLWKVGAGGGHPGVIRLLDWFETQEGFM LVLERPLPAQDLFDYITEKGPLGEGPSRCFFGQVVAAIQHCHSRGVVHRDIKDENILIDLRRGCAKLIDFGSGALLHDEPYTDFDGTRVYSPPEWISRHQYHALPATV WSLGILLYDMVCGDIPFERDQEILEAELHFPAHVSPDCCALIRRCLAPKPSSRPSLEEILLDPWMQTPAEDVTPQPLQRRPCPFGLVLATLSLAWPGLAPNGQKSHPM LAPIGCGTAGAASGLIKARWAGLSPRVTLPGGACPGSVALGLARAANLNAAPSAGASGPPVSLLSTLAPPSPGSPAALPRASTPCGLSGFSGLNLRSATSMLTKPLQ

>PIM3 H SEOID#AA 82

RGVIRLLDWFERPDGFLLVLERPEPAODLFDFTTERGALDEPLARRFFAOVLAAVRHCHSCGVVHRDIKDENLLVDLRSGELKLIDFGSGALLKDTVYTDFDGTRVY MLLSKFGSLAHLCGPGGVDHLPVKILQPAKADKESFEKAYQVGAVLGSGGFGTVYAGSRIADGLPVAVKHVVKERVTEWGSLGGATVPLEVVLLRKVGAAGGA SPPEWIRYHRYHGRSATVWSLGVLLYDMVCGDIPFEQDEEILRGRLLFRRRVSPECQQLIRWCLSLRPSERPSLDQIAAHPWMLGADGGAPESCDLRLCTLDPDDV ASTTSSSESL

>TSSK4 H SEQID#AA 83

MGKGDVLEAAPTTTAYHSLMDEYGYEVGKAIGHGSYGSVYEAFYTKOKVMVAVKIISKKKASDDYLNKFLPREIQVMKVLRHKYLINFYRAIESTSRVYIILELAQ GGDVLEWIQRYGACSEPLAGKWFSQLTLGIAYLHSKSIVHRDLKLENLLLDKWENVKISDFGFAKMVPSNQPVGCSPSYRQVNCFSHLSQTYCGSFAYACPEILRG LPYNPFLSDTWSMGVILYTLVVAHLPFDDTNLKKLLRETQKEVTFPANHTISQECKNLILQMLRQATKRATILDIIKDSWVLKFQPEQPTHEIRLLEAMCQLHNTTK QHQSLQITT

>CKIL2 H SEQID#AA 84

LRRSOSRGTFTISTTLRLGROILESIESIHSVGFLHRDIKPSNFAMGRFPSTCRKCYMLDFGLARQFTNSCGDVRPPRAVAGFRGTVRYASINAHRNREMGRHDDLWS RLTPAAIGIANATPIPGDLLRENTDEVFPDEQLSDGENGIPVGVSPDKLPGSLGHPRPQEKDVWEEMDANKNKIKLGICKAATEEENSHGQANGLLNAPSLGSPIRVR MSGGGEQLDILSVGILVKERWKVLRKIGGGGFGEIYDALDMLTRENVALKVESAQQPKQVLKMEVAVLKKLQGKDHVCRFIGCGRNDRFNYVVMQLQGRNLAD SEITQPDRDIPLVRKLRSIHSFELEKRLTLEPKPDTDKFLETCLEKMQKDTSAGKESILPALLHKPCVPAVSRTDHIWHYDEEYLPDASKPASANTPEQADGGGSNGFI LFYMLVEFVVGQLPWRKIKDKEQVGSIKERYDHRLMLKHLPPEFSIFLDHISSLDYFTKPDYQLLTSVFDNSIKTFGVIESDPFDWEKTGNDGSLTTTTTFTQLHT AVNLSSCKQEIDSKEWVIVDKEQDLQDFRTNEAVGHKTTGSPSDEEPEVLQVLEASPQDEKLQLGPWAENDHLKKETSGVVLALSAEGPPTAASEQYTDRLELQP

SQDLGPKELPDHNRLVVREFENLPGETEEKSILLESDNEDEKLSRGQHCIEISSLPGDLVIVEKDHSATTEPLDVTKTQTFSVVPNQDKNNEIMKLLTVGTSEISSRDID PHVEGQIGQVAEMQKNKISKDDDIMSEDLPGHQGDLSTFLHQEGKREKITPRNGELFHCVSENEHGAPTRKDMVRSSFVTRHSRIPVLAQEIDSTLESSSPVSAKEKL LQKKAYQPDLVKLLVEKRQFKSFLGDLSSASDKLLEEKLATVPAPFCEEEVLTPFSRLTVDSHLSRSAEDSFLSPIISQSRKSKIPRPVSWVNTDQVNSSTSSQFFPRPP PGKPPTRPGVEARLRRYKVLGSSNSDSDLFSRLAQILQNGSQKPRSTTQCKSPGSPHNPKTPPKSPVVPRRSPSASPRSSSLPRTSSSSPSRAGRPHHDQRSSSPHLGRS GAASQFIAATPTSLMEAQAEGPLTAITIPRPSVASTQSTSGSFHCGQQPEKKDLQPMEPTVELYSPRENFSGLVVTEGEPPSGGSRTDLGLQIDHIGHDMLPNIRESNK KSPPSHSGSSSSRRSCQQEHCKPSKNGLKGSGSLHHHSASTKTPQGKSKPASKLSR

>PCTAIRE3 H SEQID#AA 85

KGVHRRAAALQPDFDVSKRLSLPMDIRLPQEFLQKLQMESPDLPKPLSRMSRRASLSDIGFGKLETYVKLDKLGEGTYATVFKGRSKLTENLVALKEIRLEHEEGAP MIMNKMKNFKRRFSLSVPRTETIEESLAEFTEQFNQLHNRRNENLQLGPLGRDPPQECSTFSPTDSGEEPGQLSPGVQFQRRQNQRRFSMEVRASGALPRQVAGCTH SVPTKTYSNEVVTLWYRPPDVLLGSTEYSTPIDMWGVGCIHYEMATGRPLFPGSTVKEELHLIFRLLGTPTEETWPGVTAFSEFRTYSFPCYLPQPLINHAPRLDTDG CTAIREVSLLKNLKHANIVTLHDLIHTDRSLTLVFEYLDSDLKOYLDHCGNLMSMHNVKIFMFOLLRGLAYCHHRKILHRDLKPONLLINERGELKLADFGLARAK HILLSSLLLYESKSRMSAEAALSHSYFRSLGERVHQLEDTASIFSLKEIQLQKDPGYRGLAFQQPGRGKNRRQSIF

>PFTAIRE2 H SEQID#AA 86

TEDTWPGVSKLPNYNPEWFPLPTPRSLHVVWNRLGRVPEAEDLASQMLKGFPRDRVSAQEALVHDYFSALPSQLYQLPDEESLFTVSGVRLKPEMCDLLASYQKG MGQELCAKTVQPGCSCYHCSEGGEAHSCRRSQPETTEAAFKLTDLKEASCSMTSFHPRGLQAARAQKFKSKRPRSNSDCFQEEDLRQGFQWRKSLPFGAASSYLN LEKLGEGSYATVYKGISRINGQLVALKVISMNAEEGVPFTAIREASLLKGLKHANIVLLHDIIHTKETLTFVFEYMHTDLAQYMSQHPGGLHPHNVRLFMFQLLRGL AYIHHQHVLHRDLKPQNLLISHLGELKLADFGLARAKSIPSQTYSSEVVTLWYRPPDALLGATEYSSELDIWGAGCIFIEMFQGQPLFPGVSNILEQLEKIWEVLGVP HHPAQFSKCW

>ERK7 H SEQID#AA 87

NVPRQNSAPLLQTALLGNGERPPGAKEAPPLTLSLVKPSGRGAAPSLTSQAAAQVANQALIRGDWNRGGGVRVASVQQVPPRLPPEARPGRRMFSTSALQGAQGG MCTVVDPRIVRRYLLRRQLGQGAYGIVWKAVDRRTGEVVAIKKIFDAFRDKTDAQDMGFLLAPPTHTPVFLSLQRTFREITLLQEFGDHPNIISLLDVIRAENDRDIY LVFEFMDTDLNAVIRKGGLLQDVHVRSIFYQLLRATRFLHSGHVVHRDQKPSNVLLDANCTVKLCDFGLARSLGDLPEGPEDQAVTEYVATRWYRAPEVLLSSHR YVQRFHCPSDEWAREADVRPRAHEGVQLSVPEYRSRVYQMILECGGSSGTSREKGPEGVSPSQAHLHKPRADPQLPSRTPVQGPRPRPQSSPGHDPAEHESPRAAK YTLGVDMWSLGCILGEMLRGRPLFPGTSTLHQLELILETIPPPSEEDLLALGSGCRASVLHQLGSRPRQTLDALLPPDTSPEALDLLRRLLVFAPDKRLSATQALQHP ARALLGGYSQAYGTVCHSALGHLPLLEGHHV

>CKIIa-rs H SEQID#AA 88

RTPALVFEHVNNTDFKQLYQTFTDYDIRFYMYEILKALDYCHSMGIMHRDVKPHNVMIDHEHRKLRLIDWGLAEFYHPGQEYNVRVASRYFKGPELLVDYQMYD YSLDMWSLGCMLASMIFRKEPFFHGRDNYDQLVRIAKVLGTEDLYGYIDKYNIELDPRFNDILGRHSRKRWERFVHRENQHLVSPEALDFLDKLLRYDHQSRLTA REAMEHPYFYTVVKDQARMGSSSMPGGSTPVSSANVMSGISSVPTPSPLGPLAGSPVIAAANPLGMPVPAAAGAQQ MSGPVPSRARVYTDVNTHRPREYWDYESHVVEWGNQDDYQLVRKLGRGKYSEVFEAINITNNEKVVVKILKPVKKKKIKREIKILENLRGGPNIITLADIVKDPVS

>DYRK4 H SEQID#AA 89

MNTPLQSAHTHLTLVEFIAYLVSDSPFPAASTLSLPTCNFDPCPTKLGAGTMPPAAAGGQRRPHAAPPAAYPHRNKVRAAEARTSRAVRREYEAGDEASGRRGRG QRKGKGVEDHADWQGQIWVGVEGKSAEGQGLNLTGAFNRSPENKVSPQGPALNALEIDSSYLDPQALALPQGWQGLLFPPLLGTELVGSKLSVQIQKPPSNIKNS GRMKSVQNARADRGMWVRERRAVVRGQENTVVVFAAAASPESDFLQIVLRDIAREMVPEYKSDLQPRTQMDAKKPRKCDLTPFLVLKARKKQKFTSAKHLWV

RMTQVFHKNTSVTSLPFVDTKGKKNTVSFPHISKKVLLKSSLLYQVSADGLDPEKAGERPGFSPKPVLERPRIVGKSTVAAEEENQAHNQMPASELKASEIPFHPSIK TODPKAEEKSPKKOKVTLTAAEALKLFKNQLSPYEQSEILGYAELWFLGLEAKKLDTAPEKFSKTSFDDEHGFYLKVLHDHIAYRYEVLETIGKGSFGQVAKCLDH KPENIVLYQKGQASVKVIDFGSSCYEHQKVYTYIQSRFYRSPEVILGHPYDVAIDMWSLGCITAELYTGYPLFPGENEVEQLACIMEVLGLPPAGFIQTASRRQTFFD KNNELVALKIIRNKKRFHQQALMELKILEALRKKDKDNTYNVVHMKDFFYFRNHFCITFELLGINLYELMKNNNFQGFSLSIVRRFTLSVLKCLQMLSVEKIIHCDL SKGFPKNITNNRGKKRYPDSKDLTMVLKTYDTSFLDFLRRCLVWEPSLRMTPDQALKHAWIHQSRNLKPQPRPQTLRKSNSFFPSETRKDKVQGCHHSSRKDEITK ETTEKTKDSPTKHVQHSGDQQDCLQHGADTVQLPQLVDAPKKSEAAVGAEVSMTSPGQSKNFSLKNTNVLPPIV

HIPKI H SEQID#AA 90

EIVAIKILKNHPSYARQGQIEVSILSRLSSENADEYNLVRSYECFQHKNHTCLVFEMLEQNLYDFLKQNKFSPLPLKYIRPILQQVATALMKLKSLGLIHADLKPENIM WPGGTQQILLPSTWQQLPGVALHNSVQPTAMIPEAMGSGQQLADWRNAHSHGNQYSTIMQQPSLLTNHVTLATAQPLNVGVAHVVRQQQSSSLPSKKNKQSAPV SSKSSLDVLPSQVYSLVGSSPLRTTSSYNSLVPVQDQHQPIIIPDTPSPPVSVITIRSDTDEEEDNKYKPSSSGLKPRSNVISYVTVNDSPDSDSSLSSPYSTDTLSALRGN CTQTDPFQQTFIVCPPAFQTGLQATTKHSGFPVRMDNAVPIVPQAPAAQPLQIQSGVLTQGSCTPLMVATLHPQVATITPQYAVPFTLSCAAGRPALVEQTAAVLQA MASQLQVFSPPSVSSSAFCSAKKLKIEPSGWDVSGQSSNDKYYTHSKTLPATQGQANSSHQVANFNIPAYDQGLLLPAPAVEHIVVTAADSSGSAATSTFQSSQTLT LVDPVRQPYRVKVIDFGSASHVSKAVCSTYLQSRYYRAPEIILGLPFCEAIDMWSLGCVIAELFLGWPLYPGASEYDQIRYISQTQGLPAEYLLSAGTKTTRFFNRDP SGSVLEGPGRVVADGTGTRTIIVPPLKTQLGDCTVATQASGLLSNKTKPVASVSGQSSGCCITPTGYRAQRGGTSAAQPLNLSQNQQSSAAPTSQERSSNPAPRRQQ AFVAPLSQAPYTFQHGSPLHSTGHPHLAPAPAHLPSQAHLYTYAAPTSAAALGSTSSIAHLFSPQGSSRHAAAYTTHPSTLVHQVPVSVGPSLLTSASVAPAQYQHQ HRSNVSLLEPYQKCGLKRKSEEVDSNGSVQIIEEHPPLMLQNRTVVGAAATTTTTVTTKSSSSGEGDYQLVQHEILCSMTNSYEVLEFLGRGTFGQVAKCWKRSTK NLGYPLWRLKTPEEHELETGIKSKEARKYIFNCLDDMAQVNMSTDLEGTDMLAEKADRREYIDLLKKMLTIDADKRITPLKTLNHQFVTMTHLLDFPHSNHVKSC FQNMEICKRRVHMYDTVSQIKSPFTTHVAPNTSTNLTMSFSNQLNTVHNQASVLASSSTAAAATLSLANSDVSLLNYQSALYPSSAAPVPGVAQQGVSLQPGTTQI FATQSYIGSSRGSTIYTGYPLSPTKISQYSYL

>HIPK4 H SEQID#AA 91

DQLDDLSLQEAGHGLWGETCTNAVSDMMVPLKAAITGHHVPDSGPEPILAFYSSRLAGRHKARKPPAGSKSDSNFSNLIRLSQVSPEDDRPCRGSSWEEGEHLGAS MSTIQSETDCYDIIEVLGKGTFGEVAKGWRRSTGEMVAIKILKNDAYRNRIIKNELKLLHCMRGLDPEEAHVIRFLEFFHDALKFYLVFELLEQNLFEFQKENNFAPL PARHIRTYTLQVLTALARLKELAIIHADLKPENIMLVDQTRCPFRVKVIDFGSASIFSEVRYVKEPYIQSRFYRAPEILLGLPFCEKVDVWSLGCVMAELHLGWPLYP GNNEYDQVRYICETQGLPKPHLLHAACKAHHFFKRNPHPDAANPWQLKSSADYLAETKVRPLERRKYMLKSLDQIETVNGGSVASRLTFPDREALAEHADLKSM VELIKRMLTWESHERISPSAALRHPFVSMQQLRSAHETTHYYQLSLRSYRLSLQVEGKPPTPVVAAEDGTPYYCLAEEKEAAGMGSVAGSSPFFREEKAPGMQRAI AEPLAILQRDEDGPNIDNMTMEAERPDPELFDPSSCPGEWLSEPDCTLESVRGPRAQGLPPRRSHQHGPPRGATSFLQHVTGHH

>BIKE H SEOID#AA 92

PQPSASQYPTMMPQYQQAFFQQQMLAQHQPSQQQASPEYLTSPQEFSPALVSYTSSLPAQVGTIMDSSYSANRSVADKEAIANFTNOKNISNPPDMSGWNPFGEDN FSKLTEEELLDREFDLLRSNRLEERASSDKNVDSLSAPHNHPPEDPFGSVPFISHSGSPEKKAEHSSINQENGTANPIKNGKTSPASKDQRTGKKTSVQGQVQKGNDE AVETPKQEFDVFGAVPFFAVRAQQPQQEKNEKNLPQHRFPAAGLEQEEFDVFTKAPFSKKVNVQECHAVGPEAHTIPGYPKSVDVFGSTPFQPFLTSTSKSESNEDL SESDFESDPPSPKSSEEEEQDDEEVLQGEQGDFNDDDTEPENLGHRPLLMDSEDEEEEKHSSDSDYEQAKAKYSDMSSVYRDRSGSGPTQDLNTILLTSAQLSSDV PQKDGVNVVEEEIKKYTTLSYRAPEMINLYGGKPITTKADIWALGCLLYKLCFFTLPFGESQVAICDGNFTIPDNSRYSRNIHCLIRFMLEPDPEHRPDIFQVSYFAFK FAKKDCPVSNINNSSIPSALPEPMTASEAAARKSQIKARITDTIGPTETSIAPRQRPKANSATTATPSVLTIQSSATPVKVLAPGEFGNHRPKGALRPGNGPEILLGQGP MKKFSRMPKSEGGSGGAAGGGAGGAGAGAGAGGGSSVGVRVFAVGRHQVTLEESLAEGGFSTVFLVRTHGGIRCALKRMYVNNMPDLNVCKREITIMKELS GHKNIVGYLDCAVNSISDNVWEVLILMEYCRAGQVVNQMNKKLQTGFTEPEVLQIFCDTCEAVARLHQCKTPIIHRDLKVENILLNDGGNYVLCDFGSATNKFLN

FGLVPFDEITGSQQQKVKQRSLQKLSSRQRRTKQDMSKSNGKRHHGTPTSTKKTLKPTYRTPERARRHKKVGRRDSQSSNEFLTISDSKENISVALTDGKDRGNVL QPEESLLDPFGAKPFHSPDLSWHPPHQGLSDIRADHNTVLPGRPRQNSLHGSFHSADVLKMDDFGAVPFTELVVQSITPHQSQQSQPVELDPFGAAPFPSKQ

>NEK10 H SEQID#AA 93

HKEKRIVHRDLTPNNIMLGDKDKVTVTDFGLAKQKQENSKLTSVVGTILYSCPEVLKSEPYGEKADVWAVGCILYQMATLSPPFYSTNMLSLATKIVEAVYEPVPE KHSGQNLLAMKEVNLHNPAFGKDKKDRDSSVRNIVSELTIIKEQLYHPNIVRYYKTFLENDRLYIVMELIEGAPLGEHFSSLKEKHHHFTEERLWKIFIQLCLALRYL GIYSEKVTDTISRCLTPDAEARPDIVEVSSMISDVMMKYLDNLSTSQLSLEKKLERERRRTQRYFMEANRNTVTCHHELAVLSHETFEKASLSSSSGAASLKSELSE SAGIAVSQRKVRQISDPIQQILIQLHKIIYITQLPPALHHNLKRRVIERFKKSLFSQQSNPCNLKSEIKKLSQGSPEPIEPNFFTADYHLLHRSSGGNSLSPNDPTGLPTSIE TLVNLLGARDTNVLLGSLLALASLAESQECREKISELNIVENLLMILHEYDLLSKRLTAELLRLLCAEPQVKEQVKLYEGIPVLLSLLHSDHLKLLWSIVWILVQVCE MPDQDKKVKTTEKSTDKQQEITIRDYSDLKRLRCLLNVQSSKQQLPAINFDSAQNSMTKSEPAIRAGGHRARGQWHESTEAVELENFSINYKNERNFSKHPQRKLF AAKSNILI OCYAFRAL RFLFSMERNRPL FKRLFPTDL FEIFIDIGHYVRDISAYEEL VSKLNLL VEDELK QIAENIESIN ONKAPLKYIGNYAIL DHLGSGAFGCVYKVR SADLPPEGFQASYGKDEDRACDEILSDDNFNLENAEKDTYSEVDDELDISDNSSSSSSPLKESTFNILKRSFSASGGERQSQTRDFTGGTGSRPRPGPQMGTFLWQA OEIFTALVKNRLISREWVNRAPSIHFLRVLICLRLLMRDPCYOEILHSLGGIENLAQYMEIVANEYLGYGEEQHTVDKLVNMTYIFOKLAAVKDQREWVTTSGAHK DPETSVEIRIWGGIKQLLHILQGDRNFVSDHSSIGSLSSANAAGRIQQLHLSEDLSPREIQENTFSLQAACCAALTELVLNDTNAHQVVQENGVYTIAKLILPNKQKN LEEGITYEQMQTVIEEVLEESGYYNFTSNRYHSYPWGTKNHPTKR

>pNEK5 H SEQID#AA 94

TFEDGMKFKEYECVKEHGDYTDKAFEKLHCPEAGFSTQTVAAVGNRRQWDGGAPQTLLQMMAVADITSTCPTGPDNGQVIVIEGIPGNRKQWRHEAPGTLMSVL NSMELARTCIGTPYYLSPEICQNKPYNNKTDIWSLGCVLYELCTLKHPFEGNNLQQLVLKICQAHFAPISPGFSRELHSLISQLFQVSPRDRPSINSILKRPFLENLIPKY KKEVILLEKMKHPNIVAFFNSFQENGRLFIVMEYCDGGDLMKRINRQRGVLFSEDQILGWFVQISLGLKHIHDRKILHRDIKAQNIFLSKNGMVAKLGDFGIARVLN HNDMKEIRKKMGREPEENSKISHKTYLVKKSNLPVHQDASEGEAPVQDIEKDLKQMRLQNTKESKNPEQKYKAKKGVKFEINLDKCISDENILQEEEAMDIPNETL MQIVGSPGPGAAWPVKRVVFPNGEQFLLSVATKKVICLCLGKAGRKVLAKKLSPLETMDKYDVIKAIGQGAFGKAYLAKGKSDSKHCVIKEINFEKMPIQEKEAS HKPSYHPIPQENTGVEDYGQETRHGPSPSQWPAEYLQRKFEAQQYKLKVEKQLGLRPSSAEPNYNQRQELRSNGEEPRFQELPFRKNEMKEQEYWKQLEEIRQQY LTPEVIQEEFSHMLICRAGAPASRHAGKVVQKCKIQKVRFQGKCPPRSRISVPIKRNAILHRNEWRPPAGAQKARSIKMIERPKIAAVCGHYDYYYAQLDMLRRRA AAAHLTSSSFSADEEFAMGTLKQWLPKEEDEGKVEMVSGIEVDEEQLEPRSDDDDTNFEESEDELRDEVVEYLEKLATFKGEEKTEEASSTSKDSRKSREREGISM **QKSEELREGLENISTTSNDHICITDEDQGTSTTSQNIQV**

>NEK1 H SEOID#AA 95

SADRITIQENEVSEDGVSSTVDQLSDIHIEPGTNDSQHSKCDVDKSVQPEPFFHKVVHSEHLNLVPQVQSVQCSPEESFAFRSHSHLPPKNKNKNSLLIGLSTGLFDAN TIAPSSFSSRGQYEHYHAIFDQMQQQRAEDNEAKWKREIYGRGLPERGILPGVRPGFPYGAAGHHHFPDADDIRKTLKRLKAVSKQANANRQKGQLAVERAKQVE DKKLHEKKPLQKHKQAHQTPEKRVNTGEERRKISEEAARKRRLEFIEKEKKQKDQIISLMKAEQMKRQEKERLERINRAREQGWRNVLSAGGSGEVKAPFLGSGG MEKYVRLQKIGEGSFGKAILVKSTEDGRQYVIKEINISRMSSKEREESRREVAVLANMKHPNIVQYRESFEENGSLYIVMDYCEGGDLFKRINAQKGVLFQEDQILD WFVQICLALKHVHDRKILHRDIKSQNIFLTKDGTVQLGDFGIARVLNSTVELARTCIGTPYYLSPEICENKPYNNKSDIWALGCVLYELCTLKHAFEAGSMKNLVLK EFL QRKREAMQNKARAEGHMGIL QNLAAMYGGRPSSSRGGKPRNKEEEVYLARLRQIRL QNFNERQQIKAKLRGEKKEANHSEGQEGSEEADMRRKKIESLKAH QTELLENTTIRSEISPEGEKYKPLITGEKKVQCISHEINPSAIVDSPVETKSPEFSEASPQMSLKLEGNLEEPDDLETEILQEPSGTNKDESLPCTITDVWISEEKETKETQ NPKMLRTCSLPDLSKLFRTLMDVPTVGDVRQDNLEIDEIEDENIKEGPSDSEDIVFEETDTDLQELQASMEQLLREQPGEEYSEEEESVLKNSDVEPTANGTDVADE NENLKAQEDEKGKQNLSDTFEINVHEDAKEHEKEKSVSSDRKKWEAGGQLVIPLDELTLDTSFSTTERHTVGEVIKLGPNGSPRRAWGKSPTDSVLKILGEAELQL IISGSFPPVSLHYSYDLRSLVSQLFKRNPRDRPSVNSILEKGFIAKRIEKFLSPQLIAEEFCLKTFSKFGSQPIPAKRPASGQNSISVMPAQKITKPAAKYGIPLAYKKYG ANARAAVIKEQLERKRKEA YEREKK VWEEHL VAK GVKSSDVSPPLGQHETGGSPSKQQMRSVISVTSALKEVGVDSSLTDTRETSEEMQKTNNA ISSKREILRRL

DDNPSSESALNEEWHSDNSDGEIASECECDSVFNHLEELRLHLEQEMGFEKFFEVYEKIKAIHEDEDENIEICSKIVQNILGNEHQHLYAKILHLVMADGAYQEDND

>NEK3 H SEOID#AA 96

LILKVCQGCISPLPSHYSYELQFLVKQMFKRNPSHRPSATTLLSRGIVARLVQKCLPPEIIMEYGEEVLEEIKNSKHNTPRKKTNPSRIRLALGNEASTVQEEEQDRKGS HTDLESINENLVESALRRVNREEKGNKSVHLRKASSPNLHRRQWEKNVPNTALTALENASILTSSLTAEDDRGGSVIKYSKNTTRKQWLKETPDTLLNILKNADLSL MDDYMVLRMIGEGSFGRALLVOHESSNOMFAMKEIRLPKSFSNTONSRKEAVLLAKMKHPNIVAFKESFEAEGHLYIVMEYCDGGDLMQKIKQQKGKLFPEDMI LNWFTQMCLGVNHIHKKRVLHRDIKSKNIFLTQNGKVKLGDFGSARLLSNPMAFACTYVGTPYYVPPEIWENLPYNNKSDIWSLGCILYELCTLKHPFQANSWKN AFQTYTIYRPGSEGFLKGPLSEETEASDSVDGGHDSVILDPERLEPGLDEEDTDFEEEDDNPDWVSELKKRAGWQGLCDR

>SGK069 H SEQID#AA 97

TLIRLAGPPIPYTAPELCAPPPLPEGLPIQPALDAWALGVLLFCLLTGYFPWDRPLAEADPFYEDFLIWQASGQPRDRPQPWFGLAAAADALLRGLLDPHPRRRSAVI YEFCVGLSLGAHSAIVTAYGIGIESAHSYSFLTEPVLHGDLMAFIQPKVGLPQPAVHRCAAQLASALEYIHARGLVYRDLKPENVLVCDPACRRFKLTDFGHTRPRG MPGKQSEEGPAEAGASEDSEEEGLGGLTLEELQQQQEAARALEDMMTLSAQTLVRAEVDELYEEVRPLGQGRYGRVLLVTHRQKGTPLALKQLPKPRTSLRGFL **AIREHLGRPWRQREGEAEAVGAVEEEAGQ**

>SGK110 H SEQID#AA 98

LGSGSYGRVLLAQPHQGGPAVALKLLRRDLVLRSTFLREFCVGRCVSAHPGLLQTLAGPLQTPRYFAFAQEYAPCGDLSGMLQERGLPELLVKRVVAQLAGALDF LHSRGLVHADVKPDNVLVFDPVCSRVALGDLGLTRPEGSPTPAPPVPLPTAPPELCLLLPPDTLPLRPAVDSWGLGVLLFCAATACFPWDVALAPNPEFEAFAGWV MDSETHSGMHRGRGRWRERPGWAGGLCGLRMHPHSGLGAPGLLPQTGAGGASVAVTPNLSRTQKQVARVREDTATALQRLVELTTSRVTPVRSLRDQYHLIRK TTKPQPPQPPPWDQFAPPALALLQGLLDLDPETRSPPLAVLDFLGDDWGLQGNREGPGVLGSAVSYEDREEGGSSLEEWTDEGDDSKSGGRTGTDGGAP

>NRBP2 H SEQID#AA 99

AAHCFIQHQYLMPENVVEEKTKAMDLHAVLAELPRPRRPPLQWRYSEVSFMELDKFLEDVRNGIYPLMNFAATRPLGLPRVLAPPPEEVQKAKTPTPEPFDSETRK RSPIRAEREELRNLHFFPPEYGEVADGTAVDIFSFGMCALEMAVLEIQTNGDTRVTEEAIARARHSLSDPNMREFILCCLARDPARRPSAHSLLFHRVLFEVHSLKLL MAAPEPAPRRAREREREDESEDESDILEESPCGRWQKRREQVNQGNMPGLQSTFLAMDTEEGVEVVWNELHFGDRKAFAAHEEKIQTVFEQLVLVDHPNIVKI HKYWLDTSEACARVIFITEYVSSGSLKQFLKKTKKNHKAMNARAWKRWCTQILSALSFLHACSPPIIHGNLTSDTIFIQHNGLIKIGSVWHRIFSNALRPTALPDDL VIQMQCNLERSEDKARWHLTLLLVLEDRLHRQLTYDLLPTDSAQDLASELVHYGFLHEDDRMKLAAFLESTFLKYRGTQA

>CNK H SEQID#AA 100

REPORT OF THE STANDARD FOR THE STANDING THE STANDING THE STAND TO THE STANDARD THE STANDARD SIDOUL THE STANDAR PISSCVTVPDLTPPNPARSLFAKVTKSLFGRKKKSKNHAQERDEVSGLVSGLMRTSVGHQDARPEAPAASGPAPVSLVETAPEDSSPRGTLASSGDGFEEGLTVATV VESALCALRNCIAFMPPAEONPAPLAOPEPLVWVSKWVDYSNKFGFGYOLSSRRVAVLFNDGTHMALSANRKTVHYNPTSTKHFSFSVGAVPRALOPOLGILRYF MEPAAGFLSPRPFORAAAPAPPAGPGPPPSALRGPELEMLAGLPTSDPGRLITDPRSGRTYLKGRLLGKGGFARCYEATDTETGSAYAVKVIPQSRVAKPHOREKI **ASYMEQHLMKGGDLPSVEEVEVPAPPLLLQWVKTDQALLMLFSDGTVQVNFYGDHTKLILSGWEPLLVTFVARNRSACTYLASHLRQLGCSPDLRQRLRYALRL** LNEIELHRDLOHRHIVRFSHHFEDADNIYIFLELCSRKSLAHIWKARHTLLEPEVRYYLROILSGLKYLHORGILHRDLKLGNFFITENMELKVGDFGLAARLEPPEO

>SCYL2 H SEQID#AA 101

MESMLNKLKSTVTKVTADVTSAVMGNPVTREFDVGRHIASGGNGLAWKIFNGTKKSTKQEVAVFVFDKKLIDKYQKFEKDQIIDSLKRGVQQLTRLRHPRLLTVQ MTKIPFFDDVGAVTĹQYFDTLFQRDNLQKSQFFKGLPKVLPKLPKRVIVQRILPCLTSEFVNPDMVPFVLPNVLLIAEECTKEEYVKLILPELGPVFKQQEPIQASNMI LLIFLQKMDLLLTKTPPDEIKNSVLPMVYRALEAPSIQIQELCLNIIPTFANLIDYPSMKNALIPRIKNACLOTSSLAVRVNSLVCLGKILEYLDKWFVLDDILPFLQQIP SKEPAVLMGILGIYKCTFTHKKLGITKEQLAGKVLPHLIPLSIENNLNLNQFNSFISVIKEMLNRLESEHKTKLEQLHIMQEQQKSLDIGNQMNVSEEMKVTNIGNQQ SMGIGMMFSTPTDNTKRNLTNGLNANMGFQTSGFNMPVNTNQNFYSSPSTVGVTKMTLGTPPTLPNFNALSVPPAGAKQTQQRPTDMSALNNLFGPQKPKVSMN DKVFNNIGADLLTGSESENKEDGLQNKHKRASLTLEEKQKLAKEQEQAQKLKSQQPLKPQVHTPVATVKQTKDLTDTLMDNMSSLTSLSVSTPKSSASSTFTSVP HPLEESRDCLAFCTEPVFASLANVLGNWENLPSPISPDIKDYKLYDVETKYGLLQVSEGLSFLHSSVKMVHGNITPENIILNKSGAWKIMGFDFCVSSTNPSEQEPKF PCKEWDPNLPSLCLPNPEYLAPEYILSVSCETASDMYSLGTVMYAVFNKGKPIFEVNKQDIYKSFSRQLDQLSRLGSSSLTNIPEEVREHVKLLLNVTPTVRPDADQ QLSQQKPNQWLNQFVPPQGSPTMGSSVMGTQMNVIGQSAFGMQGNPFFNPQNFAQPPTTMTNSSSASNDLKDLFG

>SRPK2 H SEQID#AA 102

DIKPENILMCVDDAYVRRMAAEATEWQKAGAPPPSGSAVSTAPQOKPIGKISKNKKKKLKKKQKRQAELLEKRLOEIEELEREAERKIIEENITSAAPSNDODGEYC WVHKHFTEDIQTRQYRSIEVLIGAGYSTPADIWSTACMAFELATGDYLFEPHSGEDYSRDEDHIAHIIELLGSIPRHFALSGKYSREFFNRRGELRHITKLKPWSLFDV YSSSYEQFNGELPNGRHKIPESQFPEFSTSLFSGSLEPVACGSVLSEGSPLTEQEESSPSHDRSRTVSASSTGDLPKAKTRAADLLVNPLDPRNADKIRVKIADLGNAC PEVKLKTTGLEEAAEAETAKDNGEAEDQEEKEDAEKENIEKDEDDVDQELANIDPTWIESPKTNGHIENGPFSLEQQLDDEDDDEEDCPNPEEYNLDEPNAESDYT AMKVVKSAQHYTETALDEIKLLKCVRESDPSDPNKDMVVQLIDDFKISGMNGIHVCMVFEVLGHHLLKWIIKSNYQGLPVRCVKSIIRQVLQGLDYLHSKCKIIHT MSVNSEKSSSERPEPQQKAPLVPPPPPPPPPPPPPPPPPPEEEILGSDDEEQEDPADYCKGGYHPVKIGDLFNGRYHVIRKLGWGHFSTVWLCWDMQGKRFV LVEKYGWPHEDAAQFTDFLIPMLEMVPEKRASAGECLRHPWLNS

>TLK1 H SEQID#AA 103

MSVQSSSGSLEGPPSWSQLSTSPTPGSAAAARSLLNHTPPSGRPREGAMDELHSLDPRRQELLEARFTGVASGSTGSTGSCSVGAKASTNNESSNHSFGSLGSLSDKE SETPEKKQSESSRGRKRKAENQNESSQGFPNLPVFQSLAYWEMGRTAGGKSIGGRGHKISDYFEYQGGNGSSPVRGIPPAIRSPQNSHSTPSSSSVRPNSPSPTALAF TVRHGASFTEQWTDGFAFQNLVKQQEWVNQQREDIERQRKLLAKRKPPTANNSQAPSTNSEPKQRKNKAVNGAENDPFVRPNLPQLLTLAEYHEQEEIFKLRLGH LKKEEAEIQAELERVRNLHIRELKRINNEDNSQFKDHPTLNERYLLLHLLGRGGFSEVYKAFDLYEQRYAAVKIHQLNKSWRDEKKENYHKHACREYRIHKEL DHPRIVKLYDYFSLDTDTFCTVLEYCEGNDLDFYLKQHKLMSEKEARSIVMQIVNALRYLNEIKPPIIHYDLKPGNILLVDGTACGEIKITDFGLSKIMDDDSYGVDG MDLTSQGAGTYWYLPPECFVVGKEPPKJSNKVDVWSVGVIFFQCLYGRKPFGHNQSQQDILQENTILKATEVQFPVKPVVSSEAKAFIRRCLAYRKEDRFDVHQLA GDHPIVQPKQLSFKIIQTDLTMLKLAALESNKIQDLEKKEGRIDDLLRANCDLRRQIDEQQKLLEKYKERLNKCISMSKKLLIEKSTQEKLSSREKSMQDRLRLGHFT NDPYLLPHMRRSNSSGNLHMAGLTASPTPPSSSIITY

>SGK071 H_SEQID#AA_104

MLGPGSNRRRPTQGERGPGSPGEPMEKYQVLYQLNPGALGVNLVVEEMETKVKHVIKQVECMDDHYASQALEELMPLLKLRHAHISVYQELFITWNGEISSLYLC QKSDIWSLGCIILDMTSCSFMDGTEAMHLRKSLRQSPGSLKAVLKTMEEKQIPDVETFRNLLPLMLQIDPSDRITIKDVVHITFLRGSFKSSCVSLTLHRQMVPASITD LVMEFNELSFQEVIEDKRKAKKIIDSEWMQNVLGQVLDALEYLHHLDIIHRNLKPSNIILISSDHCKLQDLSSNVLMTDKAKWNIRAEEDPFRKSWMAPEALNFSFS MLLEGNVASILGDAGDTKGERALKLLSMALASYCLVPEGSLFMPLALLHMHDQWLSCDQDRVPGKRDFASLGKLGKLLGPIPKGLPWPPELVEVVVTTMELHDR VLDVQLCACSLLIHLLGQGIIVNKAPLEKVPDLISQVLATYPADGEMAEASCGVFWLLSLLGCIKEQQFEQVVALLLQSIRLCQDRALLVNNAYRGLASLVKVSEL AAFKVVVQEEGGSGLSLIKETYQLHRDDPEVVENVGMLLVHLASYEEILPELVSSSMKALLQEIKERFTSSLELVSCAEKVLLRLEAATSPSPLGGEAAOP

>SK516 H SEQID#AA 105

MHHALLQEVDVVVAPCQGLRPTVDVLGDLVNDFLPVITYALHKDELSERDEQELQEIRKYFSFPVFFFKVPKLGSEIIDSSTRRMESERSPLYRQLIDLGYLSSSHWN NTMKEELLDDATNMEFKDVIVPENGEPVGTREIKCCIRQIQELIISRLNQAVANKLISSVDYLRESFVGTLERCLQSLEKSQDVSVHITSNYLKQILNAAYHVEVTFHS CGAPGQDTKAQSMLVEQSEKLRHLSTFSHQVLQTRLVDAAKALNLVHCHCLDIFINQAFDMQRDLQITPKRLEYTRKKENELYESLMNIANRKQEEMKDMIVETL GSSVTRMLWEQIKQIIQRITWVSPPAITLEWKRKVAQEAIESLSASKLAKSICSQFRTRLNSSHEAFAASLRQLEAGHSGRLEKTEDLWLRVRKDHAPRLARLSLESR SLQDVLLHRKPKLGQELGRGQYGVVYLCDNWGGHFPCALKSVVPPDEKHWNDLALEFHYMRSLPKHERLVDLHGSVIDYNYGGGSSIAVLLIMERLHRDLYTGL KAGLTLETRLQIALDVVEGIRFLHSQGLVHRDIKLKNVLLDKQNRAKITDLGFCKPEAMMSGSIVGTPIHMAPELFTGKYDNSVDVYAFGILFWYICSGSVKLPEAF WEGDGVPWGSEPVSGPGPGGGMIRELCRGFGRYRRYLGRLRONLRETQKFFRDIKCSHNHTCLSSLTGGGGAERGPAGDVAETGLQAGQLSCISFPPKEEKYLQ QIVDCLPCILILGQDCNVKCQLLNLLLGVQVLPTTKLGSEESCKLRRLRFTYGTQTRVSLALPGQYELVHTLVAHQGNWETIPEEDLEVQENNEDAAHVLAELEVT ERCASKDHL WNNVRRGARPERL PVFDEECWQLMEACWDGDPLKRPLLGIVQPMLQGIMNRLCKSNSEQPNRGLDDST

>H85389 H SEQID#AA 106

LQLTSAIAFLHKNHIVHRDLKPDNILITERSGTPILKVADFGLSKVCAGLAPRGKEGNQDNKNVNVNKYWLSSACGSDFYMAPEVWEGHYTAKADIFALGIIIWAM METGKDGĀRRĞTQSPERKRRSPVPRAPSTKLRPAAAARAMDPVAAEAPGEAFLARRRPEGGGGSARPRYSLLAEIGRGSYGVVYEAVAGRSGARVAVKKIRCDA PENVELALAEFWALTSLKRRHONVVOFEECVLORNGLAORMSHGNKSSOLYLRLVETSLKGERILGYAEEPCYLWFVMEFCEGGDLNOYVLSRRPDPATNKSFM IERITFIDSETKKELLGTYIKQGTEIVPVGEALLENPKMELHIPQKRRTSMSEGIKQLLKDMLAANPQDRPDAFELETRMDQVTCAA

>Weelb H SEQID#AA 107

ISLGLNYIHNSSMVHLDIKPSNIFICHKMQSESSGVIEEVENEADWFLSANVMYKIGDLGHATSINKPKVEEGDSRFLANEILQEDYRHLPKADIFALGLTIAVAAGAE SPSTPKTMLSRLVISPTGKLPSRGPKHLKLTPAPLKDEMTSLALVNINPFTPESYKKLFLQSGGKRKIRGDLEEAGPEEGKGGLPAKRCVLRETNMASRYEKEFLEVE KIGVGEFGTVYKCIKRLDGCVYAIKRSMKTFTELSNENSALHEVYAHAVLGHHPHVVRYYSSWAEDDHMIIONEYCNGGSLQAAISENTKSGNHFEEPKLKDILLQ MDDKDIDKELRQKLNFSYCEETEIEGQKKVEESREASSQTPEKGEVQDSEAKGTPPWTPLSNVHELDTSSEKDKESPDQILRTPVSHPLKCPETPAQPDSRSKLLPSD SLPTNGAAWHHIRKGNFPDVPQELSESFSSLLKNMIQPDAEQRPSAAALARNTVLRPSLGKTEELQQQLNLEKFKTATLERELREAQQAQSPQGYTHHGDTGVSGT HTGSRSTKRLVGGKSARSSSFTSGEREPLH

>Wnk2 H SEOID#AA 108

TLPPANPPLPGGPGIASPCPTVQLTVEPVQEEQASQDKPPGLPQSCESYGGSDVTSGKELSDSCEGAFGGGRLEGRAARKHHRRSTRARSRQERASRPRLTILNVCN ASGTASQAGGPGTPQGLTSELETSQPLAETHEAPLAVQPLVVGLAPCTPAPEAASTRDASAPREPLPPPAPEPSPHSGTPQPALGQPAPLLPAAVGAVSLATSQLPSPP WPALQPKEQQDVGSPDKARGPPVPLQVQVTYHAQAGQPGPPEPEEPEADQHLLPPTLPTSATSLASDSTFDSGQGSTVYSDSQSSQQSVMLGSLADAAPSPAQCVC GTQEPGPDPIAAAVETAPAPDGGPREEAAATVRKEDEGAAEAKPEPGRTRRDEPEEEEDDEDDLKAVATSLDGRFLKFDIELGRGSFKTVYKGLDTETWVEVAWC EERYEIKDLLSHAFFAEDTGVRVELAEEDHGRKSTIALRLWVEDPKKLKGKPKDNGAIEFTFDLEKETPDEVAQEMIESGFFHESDVKIVAKSIRDRVALIQWRRERI MPCRTIVPNAPATIPLLAVAPPGVAALSIHSAVAQLPGQPVYPAAFPQMAPTDVPPSPHHTVQNMRATPPQPALPPQPTLPPQPVLPPQPTLPPQPVLPPQPTLPPQPTRPPQPV LPPQPMLPPQPVLPPQPALPVRPEPLQPHLPEQAAPAATPGSQILLGHPAPYAVDVAAQVPTVPVPPAAVLSPPLPEVLLPAAPELLPQFPSSLATVSASVOSVPTQTA SPPVSEGPVLPQSLPSLGAYQQPTAAPGLPVGSVPAPACPPSLQQHFPDPAMSFAPVLPPPSTPMPTGPGQPAPPGQQPPPLAQPTPLPQVLAPQPVVPLQPVPPHLPP TGDKMVECQLETHNHKMVTFKFDLDGDAPDEIATYMVEHDFIL,QAERETFIEQMKDVMDKAEDML,SEDTDADRGSDPGTSPPHL,STCGLGTGEESRQSQANAPV ELQDRKLTKLERQRFKEEAEMLKGLQHPNIVRFYDFWESSAKGKRCIVLVTELMTSGTLKTYLKRFKVMKPKVLRSWCRQILKGLLFLHTRTPPIIHRDLKCDNIFI TGPTGSVKIGDLGLATLKRASFAKSVIGTPEFMAPEMYEEHYDESVDVYAFGMCMLEMATSEYPYSECONAAQIYRKVTCGIKPASFEKVHDPEIKEIIGECICKNK YQQNVLHTGKRWFIICPVAEHPAPEAPESSPPLPLSSLPPEASQDSAPYKDQLSSKEQPSFLASQQLLSQAGPSNPPGAPPAPLAPSSPPVTALPQDGAAPATSTMPEP MEPGRĞĞGPAGMAEPRAKAARPGPQRFLRRSVVESDQEEPPGLEAAEAPGPQPPQPLQRRVLLLCKTRRLIAERARGRPAAPAPAALVAQPGAPGDAGPEPV YLAPASQVGAPAQLKPLQMPQAPLQPLAQVPPQMPPIPVVPPITPLAGIDGLPPALPDLPTATVPPVPPPQYFSPAVILPSLAAPLPPASPALPLQAVKLPHPPGAPLA

ELAPTRGAVMEQGTSSSMTESSPRSMLGYDRDGRQVASDSHVVPSVPQDVPAFVRPARVEPTDRDGGEAGESSAEPPPSDMGTVGGQASHPQTLGARALGSPRKR KTSKSKLKAGKLLNPLVRQLKVVASSTGHLADSSRGPPAKDPAQASVGLTADSTGLSGKAVQTQQPCSVRASLSSDICSGLASDGGGARGQGWTVYHPTSERVTY LGPTVPPOPPSALESDGEGPPRVGFVDSTIKSLDEKLRTLLYQEHVPTSSASAGTPVEVGDRDFTLEPLRGDQPRSEVCGGDLALPPVPKEAVSGRVQLPQPLVEKS PEQQDVSSPAKTVGRESVVSTQDEWTLASPHSLRYSAPPDVYLDEAPSSPDVKLAVRRAQTASSIEVGVGEPVSSDSGDEGPRARPPVQKQASLPVSGSVAGDFVK KATAFLQRPSRAGSLGPETPSRVGMKVPTISVTSFHSQSSYISSDNDSELEDADIKKELQSLREKHLKEISELQSQQKQEIEALYRRLGKPLPPNVGFFHTAPPTGRRR KSSSKPRARFLSGPVSVSIWSALKRLCLGKEHSSRSSTSSLAPGPEPGPQPALHVQAQVNNSNNKKGTFTDDLHKLVDEWTSKTVGAAQLKPTLNQLKQTQKLQD MEAQAGWAAPGEARAMTAPRAGVGMPRLPPAPGPLSTTVIPGAAPTLSVPTPDGALGTARRNQVWFGLRVPPTACCGHSTQPRGGQRVGSKTASFAASDPVRS

>MAP3K1 H SEQID#AA 109

STSTSSSENSIKDEEEQMCPICLLGMLDEESLTVCEDGCRNKLHHHCMSIWAEECRRNREPLICPLCRSKWRSHDFYSHELSSPVDSPSSLRAAQQQTVQQQPLAGSR **QTESNNWQELLGRLCLIDRLLLEFPAEFYPHIVSTDVSQAEPVEIRYKKLLSLTFALQSINNSHSMVGKLSRRIYLSSARMVTTVPHVFSKLLEMLSVSSSTHFTRMR** SQCLNSSPLSHHSQLMFPALSTPSSSTPSVPAGTATDVSKHRLQGFIPCRIPSASPQTQRKFSLQFHRNCPENKDSDKLSPVFTQSRPLPSSNIHRPKPSRPTPGNTSKQG LYLLQQIGPNSFLIGGDSPDNKYRVFIGPQNCSCARGTFCIHLLFVMLRVFQLEPSDPMLWRKTLKNFEVESLFQKYHSRRSSRIKAPSRNTIQKFVSRMSNSHTLSSS RNOESNFNLTHYGTQQIPPAYKDLAEPWIQVFGMELVGCLFSRNWNVREMALRRLSHDVSGALLLANGESTGNSGGSSGSSPSGGATSGSSQTSISGDVVEACCSVDPSKNSMTLDLNSSSKCDDSFGCSSNSSNAVIPSDETVFTPVEEKCRLDVNTELNSSIEDLLEASMPSSDTTVTFKSEVAVLSPEKAENDDTYKDDVNHNQKCKEKM VEALREEIRMMSHLNHPNIIRMLGATCEKSNYNLFIEWMAGGSVAHLLSKYGAFKESVVINYTEQLLRGLSYLHENQIIHRDVKGANLLIDSTGQRLRIADFGAAAR LASKGTGAGEFQGQLLGTIAFMAPEVLRGQQYGRSCDVWSVGCAIIEMACAKPPWNAEKHSNHLALIFKIASATTAPSIPSHLSPGLRDVALRCLELQPQDRPPSRE MAAAAGINRASSSGFPGARATSPEAGGGGGALKASSAPAAAGLLREAGSGGRERADWRRRQLRKVRSVELDQLPEQPLFLAASPPASSTSPSPEPADAAGSGTGF RRLMAIADEVEIAEAIQLGVEDTLDGQQDSFLQASVPNNYLETTENSSPECTIHLEKTGKGLCATKLSASSEDISERLASISVGPSSSTTTTTTTFQPKPMVQTKGRPH EA EEEE ALAIAMAMS AS QDALPIVP QLOVENGEDIIII QODTPETL PGHTKAK QPYREDTEWLKGQQIGLGAFSSCYQAQDVGTGTLMAVKQVTYVRNTSSEQEEV GPVVVKPIPVKGDGSEMNHLAAESPGEVQASAASPASKGRRSPSPGNSPSGRTVKSESPGVRRKRVSPVPFOSGRITPPRRAPSPDGFSPYSPEETNRRVNKVMRAR LSMVCADPVYKVYVAALKTLRAMLVYTPCHSLAERIKLQRLLQPVVDTILVKCADANSRTSQLSISTLLELCKGQAGELAVGREILKAGSIGIGGVDYVLNCILGN QPVAVPPHGAASRRGAHLTESVAAPDSGASSPAAAEPGEKRAPAAEPSPAAAPAGREMENKETLKGLHKMDDRPEERMIREKLKATCMPAWKHEWLERRNRR

>MAP3K8 H SEOID#AA 110

MPOJAKKOSTHRTOKPKKOSFPCICKNPGTQKSCVPLSVQPTEPRLNYLDLKYSDMFKEINSTANGPGIYEMFGTPVYCHVRETERDENTYYREICSAPSGRRITNKC EEVSMEESTGDRDISNNQILTTSLRDLQELEELHHQIPFIPSEDSWAVPSEKNSNKYVQQEKQNTASLSKVNASRILTNDLEFDSVSDHSKTLTNFSFQAKQESASSQT RSSHSERKSNIRTRLSQKKTHMKCPKTSFGIKQEHKVLISKEKSSKAVHSNLHDIENGDGISEPDWQIKSSGNEFLSSKDEIHPMNLAQTPEQSMKQNEFPPVSDLSIV LQENTVSIFMEFVPGGSISSIINRFGPLPEMVFCKYTKQILQGVAYLHENCVVHRDIKGNNVMLMPTGIIKLIDFGCARRLAWAGLNGTHSDMLKSMHGTPYWMAP QRHSSGLRIYDREEKFLISNEKKIFSENSLKSEEPILWTKGEILGKGAYGTVYCGLTSQGQLIAVKQVALDTSNKLAAEKEYRKLQEEVDLLKALKHVNIVAYLGTC YQYWVHYLDHDSLANKSITYQMFGKTLSGTNSISQEIMDSVNNEELTDELLGCLAAELLALDEKDNNSCQKMANETDPENLNLVLRWRGSTPKEMGRETTKVKI EVINESGYGRKSDIWSIGCTVFEMATGKPPLASMDRMAAMFYIGAHRGLMPPLPDHFSENAADFVRMCLTRDQHERPSALQLLKHSFLERSH

>Pak5 M SEOID#AA 111

RAHQENGMLEERAAPARMAPDKAGSRARATGHSEAGSGSGDRRRVGPEKRPKSSRDGPGGPQEASRDKRPLSGPDVSTPQPGSLTSGTKLAAGRPFNTYPRADTD YLDNFIKIGEGSTGIVCIATVRSSGKLVAVKKMDLRKQQRRELLFNEVVIMRDYRHENVVEMYNSYLVGDELWVVMEFLEGGALTDIVTHTRMNEEQIAAVCLAV MFGKKKKRVEISAPSNFEHRVHTGFDQHEQKFTGLPRQWQSLIEESARRPKPLIDPACITSIQPGAPKTIVRGSKGAKDGALTLLLDEFENMSVTRSNSLRRESPPPPA HPPRGAQGEPHTMAPNGPSATGLAAPQSSSSSRPPTRARGAPSPGVLGPHASEPQLAPPARALAAPAVPPAPGPPGPRSPQREPQRVSHEQFRAALQLVVDPGDPRS

LQALAVLHAQGVIHRDIKSDSILLTHDGRVKLSDFGFCAQVSKEVPRRKSLVGTPYWMAPELISRLPYGPEVDIWSLGVMVIEMVDGEPPYFNEPPLKAMKMIRDN LPPRLKNLHKASPSLKGFLDRLLVRDPAQRATAAELLKHPFLTKAGPPASIVPLMRQHRTR

>STLK6-rs H SEQID#AA 112

RAVYDFPQFSTSVQPWLSPELLRQDLHGYNVKSDIYSVGITACELASGQVPFQDMHRTQMLLQKLKGPPYSPLDISIFPQSESRMKNSRSGVDSGIGESVLVSSGTHT VILSHFFRHPNITTYWTVFTVGSWLWVISPFMAYGSASQLLRTCFPEGMSETLIRNIIFGAVRGLNYLYQNGCIHRSIKASHILISGDGLVTLSGLSHLHSLVKHGQRH MSLLDCFCTSRTQDESLRPEKQSETSIHQYLVDEPTLSWSPPSTRASEVLCSTNVSHYELQVETGRGFDNLTSVHLAWHTPTGTLVTIKITNLENCNEERLKALQKA VNSDRLHTPSSKTFSPAFFSLVQLCLQQDPEKRPSASSLLSHVFFKQMKEESQDSILSRLPPAYNKPSIPLPPVLPWTEPECDFPDEKDSYLEF

>MAP2K2 H SEQID#AA 113

MLARRKPMLPALTINPTIAEGPSPTSEGASEANLVDLQNKLEELELDEQQKRLEAFLTQKAKVGELKDDDFERTSELDAGNGGVVTKVQHRPSGLIMARKLIHLEIK PAIRNQIIREHQVLHECNSPYIVGFYGAFYCDREISICMEHMDGGSLDQGLKEAKRIPEDILGKVSIAVLRGLAYLREKHQIMHRNVKPSNILVNSRGEIKLCDFGVSG QLIDSMANSFVGTRSYMAPERLQGTHYSVQSVIWSMDLSLVELAIERYPIPPDAKELEAIFGRPVVDREEGEPHSISSWPGSPGRPNSGHGMDSRPAMAIFELLDYI VKEPPPKLPNGVFTPDFQEFVNKCLIKNPTERADLKMLTNHAFIKRSEVKEADFAC

>CCK4 H SEQID#AA 114

MGAARGSPARPRRLPLLSVLLLPLLGGTQTAIVFIKQPSSQDALQGRRALLRCEVEAPGPVHVYWLLDGAPVQDTERRFAQGSSLSFAAVDRLQDSGTFQCVARDD KPGYLDCLTQATPKPTVVWYRNQMLISEDSRFEVFKNGTLRINSVEVYDGTWYRCMSSTPAGSIEAQARVQVLEKLKFTPPPQPQQCMEFDKEATVPCSATGREKP DVYNSEYYHFRQAWVPLRWMSPEAILEGDFSTKSDVWAFGVLMWEVFTHGEMPHGGQADDEVLADLQAGKARLPQPEGCPSKLYRLMQRCWALSPKDRPSFSE VTGEEARSANASFNIKWIEAGPVVLKHPASEAEIQPQTQVTLRCHIDGHPRPTYQWFRDGTPLSDGQSNHTVSSKERNLTLRPAGPEHSGLYSCCAHSAFGQACSSQ EDMPLFEPRVFTAGSEERVTCLPPKGLPEPSVWWEHAGVRLPTHGRVYQKGHELVLANIAESDAGVYTCHAANLAGQRRQDVNITVATVPSWLKKPQDSQLEEG NFTLSIADESFARVVLAPQDVVVARYEEAMFHCQFSAQPPPSLQWLFEDETPITNRSRPPHLRRATVFANGSLLLTQVRPRNAGIYRCIGQGQRGPPIILEATLHLAEI GPRMHIFQNGSLVIHDVAPEDSGRYTCIAGNSCNIKHTEAPLYVVDKPVPEESEGPGSPPPYKMIQTIGLSVGAAVAYIIAVLGLMFYCKKRCKAKRLQKQPEGEEP EMECLNGGPLQNGQPSAEIQEEVALTSLGSGPAATNKRHSTSDKMHFPRSSLQPITTLGKSEFGEVFLAKAQGLEEGVAETLVLVKSLQSKDEQQQLDFRRELEMF GKLNHANVVRLLGLCREAEPHYMVLEYVDLGDLKQFLRISKSKDEKLKSQPLSTKQKVALCTQVALGMEHLSNNRFVHKDLAARNCLVSAQRQVKVSALGLSK TIKWERADGSSLPEWVTDNAGTLHFARVTRDDAGNYTCIASNGPQGQIRAHVQLTVAVFITFKVEPERTTVYQGHTALLQCEAQGDPKPLIQWKGKDRILDPTKL IASALGDSTVDSKP

>LMR1 H SEQID#AA_115

WGVAAFCPAFFEDPLGTSPLGSSGAPPLPLTGEDELEEVGARRAAQRGHWRSNVSANNNSGSRCPESWDPVSAGCHAEGCPSPKQTPRASPEPGYPGEPLLGLQAA QPGRSVQLLKSTDVGRHSLLYLKEIGRGWFGKVFLGEVNSGISSAQVVVKELQASASVQEQMQFLEEVQPYRALKHSNLLQCLAQCAEVTPYLLVMEFCPLGDLK ALNGSSSSPEVEAPSSEDEDTAEATSGIFTDTSSDGLQARRPDVVPAFRSLQKQVGTPDSLDSLDIPSSASDGGYEVFSPSATGPSGGQPRALDSGYDTENYESPEFVL GYLRSCRVAESMAPDPRTLQRMACEVACGVLHLHRNNFVHSDLALRNCLLTADLTVKIGDYGLAHCKYREDYFVTADQLWVPLRWIAPELVDEVHSNLLVVDQ PGGGGVGPGPGAAGPMLGGVVELAAASSFPLLEQFAGDGFHADGDDVLTVTETSRGLNFEYKWEAGRGAEAFPATLSPGRTARLQELCAPDGAPPGVVPVLSAH KEAQEGCEPQAFAELASEGEGPGPETRLSTSLSGLNEKNPYRDSAYFSDLEAEAEATSGPEKKCGGDRAPGPELGLPSTGQPSEQVCLRPGVSGEAQGSGPGEVLPP TKSGNVWSLGVTIWELFELGTQPYPQHSDQQVLAYTVREQQLKLPKPQLQLTLSDRWYEVMQFCWLQPEQRPTAEEVHLLLSYLCAKGATEAEEEFERRWRSLR SPSLGSEYFIRLEEAAPAAGHDPDCAGCAPSPPATADQDDDSDGSTAASLAMEPLLGHGPPVDVPWGRGDHYPRRSLARDPLCPSRSPSPSAGPLSLAEGGAEDAD SAQEPGCCPGLPHLCSAQGLAPAPCLVTPSWTETASSGGDHPQAEPKLATEAEGTTGPRLPLPSVPSPSQEGAPLPSEEASAPDAPDALPDSPTPATGGEVSAIKLAS MSSSFFNPSFAFSSHFDPDGAPLSELSWPSSLAVVAVSFSGLFAVIVLMLACLCCKKGGIGFKEFENAEGDEYAADLAQGSPATAAQNGPDVYVLPLTEVSLPMAK

DESDEELRCYSVQEPSEDSEEEAPAVPVVVAESQSARNLRSLLKMPSLLSETFCEDLERKKKAVSFFDDVTVYLFDOESPTRELGEPFPGAKESPPTFLRGSPGSPSAP LLQLEGSSPEPSTCPSGLVPEPPEPQGPAKVRPGPSPSCSQFFLLTPVPLRSEGNSSEFQGPPGLLSGPAPQKRMGGPGTPRAPLRLALPGLPAALEGRPEEEEEDSEDS NRPQQADGSPNGSTAEEGGGFAWDDDFPLMTAKAAFAMALDPAAPAPAPAPTPTPAPFSRFTVSPAPTSRFSITHVSDSDAESKRGPEAGAGGESKEA

>RYK H SEQID#AA 116

MRGAARLGRPGRSCLPGARGLRAPPPPLLLLLALLPLLPAPGAAAPAPRPPELQSASAGPSVSLYLSEDEVRRLIGLDAELYYVRNDLISHYALSFSLLVPSETNFL HFTWHAKSKVEYKLGFQVDNVLAMDMPQVNISVQGEVPRTLSVFRVELSCTGKVDSEVMILMQLNLTVNSSKNFTVLNFKRRKMCYKKLEEVKTSALDKNTSRT ANNPQAISQQDLVHMAIQIACGMSYLARREVIHKDLAARNCVIDDTLQVKITDNALSRDLFPMDYHCLGDNENRPVRWMALESLVNNEFSSASDVWAFGVTLWE AISRERITLKDVLQEGTFGRIFHGILIDEKDPNKEKQAFVKTVKDQASEIQVTMMLTESCKLRGLHHRNLLPITHVCIEEGEKPMVILPYMNWGNLKLFLRQCKLVE IYDPVHAAPTTSTRVFYISVGVCCAVIFLVAIILAVLHLHSMKRIELDDSISASSSQGLSQPSTQTTQYLRADTPNNATPITSYPTLRIEKNDLRSVTLLEAKGKVKDI LMTLGQTPYVDIDPFEMAAYLKDGYRIAQPINCPDELFAVMACCWALDPEERPKFQQLVQCLTEFHAALGAYV

>LRRK2 H SEOID#AA 117

VSSIFGLYIRDILTVKVEGCPKHPKGIISRRDVEKFLSKKRKFPKNYMSQYFKLLEKFQIALPIGEEYLLVPSSLSDHRPVIELPHCENSEIIIRLYEMPYFPMGFWSRLIN ETIFLNQDL EEKNENQENDDEGEEDKLFWLEACYKALTWHRKNKHVQEAACWALNNLLMYQNSLHEKIGDEDGHFPAHREVMLSMLMHSSSKEVFQASANALS CQVCEKESSPKLVELLINSGSREQDVRKALTISIGKGDSQIISLLLRRLALDVANNSICLGGFCIGKVEPSWLGPLFPDKTSNLRKQTNIASTLARMVIRYQMKSAVEE KLQSHMRHSDSISSLASEREYITSLDLSANELRDIDALSQKCCISVHLEHLEKLELHQNALTSFPQQLCETLKSLTHLDLHSNKFTSFPSYLLKMSCIANLDVSRNDIGP NKFSCIPEALL NLPHLRSLDMSSNDIOYLPGPAHWKSLNLRELLFSHNOISILDLSEKA YLWSRVEKLHLSHNKLKEIPPEIGCLENLTSLDVSYNLELRSFPNEMGKLS TLEONVNFRKILLSKGIHLNVLELMOKHIHSPEVAESGCKMLNHLFEGSNTSLDIMAAVVPKILTVMKRHETSLPVOLEALRAILHFIVPGMPEESREDTEFHHKLN MLNNDELEFEQAPEFLLDCFVCIHLYPSSDYISRHYMRTINIVQTGFAKCRWRVTVHGADHGDGSFGSVYRAAYEGEEVAVKIFNKHTSLRLLRQELVVLCHLHHP MASGSCQGCEDEETLKKLIVRLNNVQEGKQIETLVQILEDLLVFTYSEHASKLFQGKNIHVPLLIVLDSYMRVASVQQVGWSLLCKLIEVCPGTMQSLMGPQDVG NFKDEEEIVLHVLHCLHSLAIPCNNVEVLMSGNVRCYNIVVEAMKAFPMSERIQEVSCCLLHRLTLGNFFNILVLNEVHEFVVKAVQQYPENAALQISALSCLALLT KTINESLNFKIRDQLVVGQLIPDCYVELEKIILSERKNVPIEFPVIDRKRLLQLVRENQLQLDENELPHAVHFLNESGVLLHFQDPALQLSDLYFVEPKWLCKIMAQD SLISLLAAGIRPRMLVMELASKGSLDRLLQQDKASLTRTLQHRIALHVADGLRYLHSAMIIYRDLKPHNVLLFTLYPNAAIIAKIADYGIAQYCCRMGIKTSEGTPGF RAPEVARGNVIYNQQADVYSFGLLLYDILTTGGRIVEGLKFPNEFDELEIQGKLPDPVKEYGCAPWPMVEKLIKQCLKENPQERPTSAQVFDILNSAELVCLTRRILL PKNVIVECMVA THHNSRNASIWLGCGHTDRGQLSFLDLNTEGYTSEEVADSRILCLALVHLPVEKESWIVSGTQSGTLLVINTEDGKKRHTLEKMTDSVTCLYCNS FSKQSKQKNFLLVGTADGKLAIFEDKTVKLKGAAPLKILNIGNVSTPLMCLSESTNSTERNVMWGGCGTKIFSFSNDFTIQKLIETRTSQLFSYAAFSDSNIITVVVDT ALYIAKQNSPVVEVWDKKTEKLCGLIDCVHFLREVMVKENKESKHKMSYSGRVKTLCLQKNTALWIGTGGGHILLLDLSTRRLIRVIYNFCNSVRVMMTAQLGSL MVKK QCFKNDIHKL VLAALNRFIGNPGIQKCGLK VISSIVHFPDALEML SLEGAMDSVLHTLQMYPDDQEIQCLGLSLIGYLITKKNVFIGTGHLLAKIL VSSLYRFK SVVLDPTVKCPTLKQFNLSYNQLSFVPENLTDVVEKLEQLILEGNKISGICSPLRLKELKILNLSKNHISSLSENFLEACPKVESFSARMNFLAAMPFLPPSMTILKLSQ GREEFYSTHPHFMTQRALYLAVYDLSKGQAEVDAMKPWLFNIKARASSSPVILVGTHLDVSDEKQRKACMSKITKELLNKRGFPAIRDYHFVNATEESDALAKLR DVAEIQTKGFQTILAILKLSASFSKLLVHHSFDLVIFHQMSSNIMEQKDQQFLNLCCKCFAKVAMDDYLKNVMLERACDQNNSIMVECLLLLGADANQAKEGSSLI RLLEISPYMLSGRGCILLGQVVDHIDSLMEEWFPGLLEIDICGEGETLLKKWALYSFNDGEEHQKILLDDLMKKAEEGDLLVNPDQPRLTIPISQIAPDLILADLPRNI NDWEVLGVHQLILKMLTVHNASVNLSVIGLKTLDLLLTSGKITLLILDEESDIFMLIFDAMHSFPANDEVQKLGCKALHVLFERVSEEQLTEFVENKDYMILLSALT GTASGSDGNFSEDVLSKFDEWTFIPDSSMDSVFAQSDDLDSEGSEGSFLVKKKSNSISVGFFYRDAVLQRCSPNLQRHSNSLGPIFDHEDLLKRKRKILSSDDSLRSS KIWDLPLDELHLNFDFKHIGCKAKDIIRFLQQRLKKAVPYNRMKLMIVGNTGSGKTTLLQQLMKTKKSDLGMQSATVGIDVKDWPIQIRDKRKRDLVLNVWDFA KNVML VLGYNRKNTEGTQKQKEIQSCLTVWDINLPHEVQNLEKHIEVRKELAEKMRRTSVE

>pMLK4_H_SEQID#AA_118

NRALAAANAAPDPRAPGPRARRIPPHVLVNWAVQIARGMLYLHEEAFVPILHRDLKSSNILLLEKIEHDDICNKTLKITDFGLAREWHRTTKMSTAGTYAWMAPE VIKSSLFSKGSDIWSYGVLLWELLTGEVPYRGIDGLAVAYGVAVNKLTLPIPSTCPEPFAKLMKECWQQDPHIRPSFALILEQLTAIEGAVMTEMPQESFHSMQDDW KAQAAEEPLPKEEKKKREGIFQRASKSRRSASPPTSLPSTCGEASSPPSLPLSSALGILSTPSFSTKCLLQMDSEDPLVDSAPVTCDSEMLTPDFCPTAPGSGREPALMP RLDTDCSVSRNLPSSFLQQTCGNVPYCASSKHRPSHHRRTMSDGNPTPTGATIISATGASALPLCPSPAPHSHLPREVSPKKHSTVHIVPQRRPASLRSRSDLPQAYPQ KLEIQQMFDELRTKEKELRSREEELTRAALQQKSQEELLKRREQQLAEREIDVLERELNILIFQLNQEKPKVKKRKGKFKRSRLKLKDGHRISLPSDFQHKITVQASP NLDKRRSLNSSSSSPPSSPTMMPRLRAIQLTSDESNKTWGRNTVFRQEEFEDVKRNFKKKGCTWGPNSIQMKDRTDCKERIRPLSDGNSPWSTILIKNQKTMPLASL FVDQPGSCEEPKLSPDGLEHRKPKQIKLPSQAYIDLPLGKDAQRENPAEAESWEEAASANAATVSIEMTPTNSLSRSPQRKKTESALYGCTVLLASVALGLDLRELH MALRGAAGATDTPVSSAGGAPGGSASSSSTSSGGSASAGAGLWAALYDYEARGEDELSLRRGQLVEVLSQDAAVSGDEGWWAGOVQRRLGIFPANYVAPCRPA ASPAPPSRPSSPVHVAFERLELKELIGAGGFGQVYRATWQGQEVAVKAARQDPEQDAAAAAESVRREARLFAMLRHPNIIELRGVCLQQPHLCLVLEFARGGAL TAVSQLAQTACVVGRPGPHPTQFLAAKERTKSHVPSLLDADVEGQSRDYTVPLCRMRSKTSRPSIYELEKEFLS

>KSR H SEQID#AA 119

MDRAALRAAAMGEKKEGGGGGDAAAAEGGAGAAASRALQQCGQLQKLIDISIGSLRGLRTKCAVSNDLTQQEIRTLEAKLVRYICKQRQCKLSVAPGERTPELNS GSSQLGRAGNSAQGPRSISVSALPASDSPTPSFSEGLSDTCIPLHASGRLTPRALHSFTTPPTTPQLRRHTKLKPPRTPPPPSRKVFQLLPSFPTLTRSKSHESQLGNRIDD VSSMRFDLSHGSPQMVRRDIGLSVTHRFSTKSWLSQVCHVCQKSMIFGVKCKHCRLKCHNKCTKEAPACRISFLPLTRLRRTESVPSDINNPVDRAAEPHFGTLPKA LTKKEHPPAMNHLDSSSNPSSTTSSTPSSPAPFPTSSNPSSATTPPNPSPGQRDSRFNFPAAYFIHHRQQFIFPDISAFAHAAPLPEAADGTRLDDQPKADVLEAHEAEA HENVVLFMGACMNPPHLAIITSFCKGRTLHSFVRDPKTSLDINKTRQIAQEIIKGMGYLHAKGIVHKDLKSKNVFYDNGKVVITDFGLFGISGVVREGRRENQLKLS HDWLCYLAPEIVREMTPGKDEDQLPFSKAADVYAFGTVWYELQARDWPLKNQAAEASIWQIGSGEGMKRVLTSVSLGKEVSEILSACWAFDLQERPSFSLLMDM EEPEAGKSEAEDDEDEVDDLPSSRRPWRGPISRKASQTSVYLQEWDIPFEQVELGEPIGQGRWGRVHRGRWHGEVAIRLLEMDGHNQDHLKLFKKEVMNYRQTR YPRFSDWLYTFNVRPEVVQEIPRDLTLDALLEMNEAKVKETLRRCGASGDECGRLQYALTCLRKVTGLGGEHKEDSSWSSLDARRESGSGPSTDTLSAASLPWPP LEKLPKLNRRLSHPGHFWKSADINSSKVVPRFERFGLGVLESSNPKM

>KSR2 H SEQID#AA 120

KKKVALÓERNAELDGFPOLRHWFRIVDVRKEVLEEISPGOLSLEDLLEMTDEOVCETVEKYGANREECARLNASLSCLRNVHMSGGNLSKODWTIOWPTTETGKE MGAAGOMOASSLTRAQLAAGKEEEGKGVAEQAMDEENMTKSEEQQPLSLQKALQQCELVQNMIDLSISNLEGLRTKCATSNDLTQKEIRTLESKLVKYFSRQLSC PPGTPPPSSRKLIHLIPGFTALHRSKSHEFQLGHRVDEAHTPKAKKKSKPLNLKIHSSVGSCENIPSQQRSPLLSERSLRSFFVGHAPFLPSTPPVHTEANFSANTLSVPR NKDHIPVPYQPDSSSNPSSTTSSTPSSPAPPLPPSATPPSPLHPSPQCTRQQKNFNLPASHYYKYKQQFIFPDVVPVPETPTRAPQVILHPVTSNPILEGNPLLQIEVEPTS ENEEVHDEAEESEDDFEEMNLSLLSARSFPRKASQTSIFLQEWDIPFEQLEIGELIGKGRFGQVYHGRWHGEVAIRLIDIERDNEDQLKAFKREVMAYRQTRHENVV NNPVCPPEPTPWIRTHLSQSPRVPSKCVQHYCHTSPTPGAPVYTHVDRLTVDAYPGLCPPPPLESGHRSLPPSPRQRHAVRTPPRTPNIVTTVTPPGTPPMRKKNKLK CHLAPEIIRQLSPDTEEDKLPFSKHSDVFALGTIWYELHAREWPFKTQPAEAIIWQMGTGMKPNLSQIGMGKEISDILLFCWAFEQEERPTFTKLMDMLEKLPKRNR LFMGACMSPPHLAIITSLCKGRTLYSVVRDAKIVLDVNKTRQIAQEIVKGMGYLHAKGILHKDLKSKNVFYDNGKVVITDFGLFSISGVLQAGRREDKLRIQNGWL WSPQIPRRDLGNSIKHRFSTKYWMSQTCTVCGKGMLFGLKCKNCKLKCHNKCTKEAPPCHLLIIHRGDPARLVRTESVPCDINNPLRKPPRYSDLHISQTLPKTNKI RLSHPGHFWKSAEL

>KIAA1646 H SEOID#AA 121

VTFWCPEEQLCHLWLQTLREMLEKLTSRPKHLLVFINPFGGKGQGKRIYERKVAPLFTLASITTDIIVTEHANQAKETLYEINIDKYDGIVCVGGDGMFSEVLHGLIG MGATGAAEPLQSVLWVKQQRCAVSLEPARALLRWWRSPGPGAGAPGADACSVPVSEIIAVEETDVHGKHQGSGKWOKMEKPYAFTVHCVKRARRHRWKWAO RTQRSAGVDQNHPRAVLVPSSLRIGIIPAGSTDCVCYSTVGTSDAETSALHIVVGDSLAMDVSSVHHNSTLLRYSVSLLGYGFYGDIIKDSEKKRWLGLARYDFSGL KTFLSHHCYEGTVSFLPAQHTVGSPRDRKPCRAGCFVCRQSKQQLEEEQKKALYGLEAAEDVEEWQVVCGKFLAINATNMSCACRRSPRGLSPAAHLGDGSSDLI

LIRKCSRFNFLRFLIRHTNQQDQFDFTFVEVYRVKKFQFTSKHMEDEDSDLKEGGKKRFGHICSSHPSCCCTVSNSSWNCDGEVLHSPAIEVRVHCQLVRLFARGIE ENPKPDSHS

>DGK-beta H SEOID#AA 122

CPTKCDKCHKTŶKCYQGLTGLHCVWCQITLHNKCASHLKPECDCGPLKDHILPPTTICPVVLQTLPTSGVSVPEERQSTVKKEKSGSQQPNKVIDKNKMQRANSVT VDGQGLQVTPVPGTHPLLVFVNPKSGGKQGERIYRKFQYLLNPRQVYSLSGNGPMPGLNFFRDVPDFRVLACGGDGTVGWVLDCIEKANVGKHPPVAILPLGTGN VSLEEWIQGGMTTIPLLVLLGLENNVKDDGQHVWRLKHFNKPAYCNLCLNMLIGVGKQGLCCSFCKYTVHERCVARAPPSCIKTYVKSKRNTDVMHHYWVEGN MTNOEKWAHLSPSEFSOLOKYAEYSTKKLKDVLEEFHGNGVLAKYNPEGKODILNOTIDFEGFKLFMKTFLEAELPDDFTAHLFMSFSNKFPHSSPMVKSKPALLS GGLRMNK GAITPPRTTSPANTCSPEVIHLKDIVCYLSLLERGRPEDKLEFMFRLYDTDGNGFLDSSELENIISOMMHVAEYLEWDVTELNPILHEMMEEIDYDHDGT DLARCLRWGGGYEGENLMKILKDIENSTEIMLDRWKFEVIPNDKDEKGDPVPYSIINNYFSIGVDASIAHRFHIMREKHPEKFNSRMKNKFWYFEFGTSETFSATCK KLHESVEIECDGVQIDLINISLEGIAILNIPSMHGGSNLWGESKKRRSHRRIEKKGSDKRTTVTDAKELKFASQDLSDQLLEVVGLEGAMEMGQIYTGLKSAGRRLA **QCSCVVIRTSKSLPMQIDGEPWMQTPCTIKITHKNQAPMLMGPPPKTGLFCSLVKRTRNRSKE**

>IP6K1 H SEQID#AA 123

LRGLKAVLERQASYRFYSSSLLVIYDGKECRAESCLDRRSEMRLKHLDMVLPEVASSCGPSTSPSNTSPEAGPSSQPKVDVRMIDFAHSTFKGFRDDPTVHDGPDRG DDTTEREQPRRKHSRRSLHRSGSGSDHKEEKASLSLETSESSQEAKSPKVELHSHSEVPFQMLDGNSGLSSEKISHNPWSLRCHKQQLSRMRSESKDRKLYKFLLLE NVVHHFKYPCVLDLKMGTRQHGDDASAEKAARQMRKCEQSTSATLGVRVCGMQVYQLDTGHYLCRNKYYGRGLSIEGFRNALYQYLHNGLDLRRDLFEPILSK MCVCQTMEVGQYGKNASRAGDRGVLLEPFIHQVGGHSSMMRYDDHTVCKPLISREQRFYESLPPEMKEFTPEYKGVVSVCFEGDSDGYINLVAYPYVESETVEQ YVFGLENLISIMEQMRDENQ

>YAB1 H SEQID#AA 124

MAAILGDTIMVAKGLVKLTQAAVETHLQHLGIGGELIMAARALQSTAVEQIGMFLGKVQGQDKHEEYFAENFGGPEGFFHFSVPHAAGASTDFSSASAPDQSAPPS LGHAHSEGPAPAYVASGPFREAGFPGQASSPLGRANGRLFANPRDSFSAMGFQRRFFHQDQSPVGGLTAEDIEKARQAKARPENKQHKQTLSEHARERKVPVTRIG DRDRETVRAKSIEMKFLTGYEVKVMEDAHLDAILILGEAFASDEPFDFGTQSTTEKIHNLIPVMLRHRLVPPPEETYSLHRKMGGSFLICSKLKARFPCKAMFEEAYS LKGHPFFYVPEIVDELCSPHVLTTELVSGFPLDQAEGLSQEIRNEICYNILVLCLRELFEFHFMQTDPNWSNFFYDPQQHKVALLDFGATREYDRSFTDLYIQIIRAAA NDLGPNWRDKLEYFEERPFAAASIGQVHLARMKGGREVAMKIQYPGVAQSINSDVNNLMAVLNMSNMLPEGLFPEHLIDVLRRELALECDYQREAACARKFRDL RLANFGGLAVGLGFGALAEVAKKSLRSEDPSGKKAVLGSSPFLSEANAERIVRTLCKVRGAALKLGOMLSIQDDAFINPHLAKIFERVRQSADFMPLKOMMKTLN **NYCKRQAQQ**

>AF052122 H SEQID#AA 125

LGEEDIRRAREARPRKTPRPQLSDRSRERKVPASRISRLANFGGLAVGLGLGVLAEMAKKSMPGGRLQSEGGSGLDSSPFLSEANAERIVQTLCTVRGAALKVGQM GRGEAAAÄPINPGGGSHWLGLRLRGLRGNDEAGHRAQGATLQVRVQAMWLKVGGLLRGTGGQLGQTVGWPCGALGPGPHRWGPCGGSWAQKFYQDGPGRG LSIQDNSFISPQLQRIFERVRQSADFMPRWQMLRVLEEELGRDWQAKVASLEEVPFAAASIGQVHQGLLRDGTEVAVKIQYPGIAQSIQSDVQNLLAVLKMSAALP WANFLYDASSHQVTLLDFGASREFGTEFTDHYIEVVKAAADGDRDCVLQKSRDLKFLTGFETKAFSDAHVEAVMILGEPFATQGPYDFGSGETARRIQDLIPVLLR AGLFAEQSLQALQQELAWECDYRREAACAQNFRQLLANDPFFRVPAVVKELCTTRVLGMELAGGVPLDQCQGLSQDLRNQICFQLLTLCLRELFEFRFMQTDPN HRLCPPPEETYALHRKLAGAFLACAHLRAHIACRDLFQDTYHRYWASRQPDAATAGSLPTKGDSWVDPS

>AAF23326_H_SEQID#AA_126

MERNKIDVNEISRHLGKMYSEMIFVNGFVHCDPHPGNVLVRKHPGTGKAEIVLLDHGLYQMLTEEFRLNYCHLWQSLIWTDMKRVKEYSQRLGAGDLYPLFACM MARKALKLASWTSMALAASGIYFYSNKYLDPNDFGAVRVGRAVATTAVISYDYLTSLKSVPYGSEEYLQLRSKIHDLFQSFDDTPLGTASLAQVHKAVLHDGRTV LTARSWDSVNRGISQAPVTATEDLEIRNNAANYLPQISHLLNHVPRQMLLILKTNDLLRGIEAALGTRASASSFLNMSRCCIRALAEHKKKNTCSFFRRTQISFSEAF AVKVOHPKVRAQSSKDILLMEVLVLAVKQLFPEFEFMWLVDEAKKNLPLELDFLNEGRNAEKVSQMLRHFDFLKVPRIHWDLSTERVLLMEFVDGGQVNDRDY NLWQINLHELILRVKGLKLADRVLALICWLFPAPL

>SGK493 H SEQID#AA 127

ENYNRQDGQRVQGGVPAGSDEYEDECPHLIALSSLNREFRPFRDEENVGAMNQYRTRTLSITSSGSAVSCSTIPPELVKQKVKRQLTKQQKSAVRRLQKGEANIFT GKESDIYIVANEEGQQFALKLHRLGRTSFRNLKNKRDYHKHRHNVSWLYLSRLSAMKEFAYMKALYERKFPVPKPIDYNRHAVVMELINGYPLCQIHHVEDPASV YDEAMELIVKLANHGLIHGDFNEFNLILDESDHITMIDFPQMVSTSHPNAEWYFDRDVKCIKDFFMKRFSYESELFPTFKDIRREDTLDVEVSASGYTKEMQADDEL MGKVNVAKLRYMSRDDFRVLTAVEMGMKNHEIVPGSLIASIASLKHGGCNKVLRELVKHKLIAWERTKTVQGYRLTNAGYDYLALKTLSSRQVVESVGNQMGV LHPLGPDDKNIETKEGSEFSFSDGEVAEKAEVYRSENESERNCLEESEGCYCRSSGDPEQIKEDSLSEESADARSFEMTEFNQALEEIKGQVVENNSVTEFSEEKNRT KQRRENMQNIKSSLEAASFWGE

>BRD2 H SEQID#AA 128

NCYKYNPPDHDVVAMARKLODVFEFRYAKMPDEPLEPGPLPVSTAMPPGLAKSSSESSSEESSSEESSSEEEEEEDEEDEEDEEEESSSDSEEERAHRLAELQEQLRAVH ESGRPIKPPRKDLPDSQQQHQSSKKGKLSEQLKHCNGILKELLSKKHAAYAWPFYKPVDASALGLHDYHDIIKHPMDLSTVKRKMENRDYRDAQEFAADVRLMFS VTSAHQVPAVSSVSHTALYTPPPEIPTTVLNIPHPSVISSPLLKSLHSAGPPLLAVTAAPPAQPLAKKKGVKRKADTTTPTPTAILAPGSPASPPGSLEPKAARLPPMRR MLQNVTPHNKLPGEGNAGLLGLGPEAAAPGKRIRKPSLLYEGFESPTMASVPALQLTPANPPPFEVSNPKKPGRVTNQLQYLHKVVMKALWKHQFAWPFRQPVD EESRPMSYDEKRQLSLDINKLPGEKLGRVVHIIQAREPSLRDSNPEEIEIDFETLKPSTLRELERYVLSCLRKKPRKPYTIKKPVGKTKEELALEKKRELEKRLQDVSG AVKLGLPDYHKIIKQPMDMGTIKRRLENNYYWAASECMQDFNTMFTNCYIYNKPTDDIVLMAQTLEKIFLQKVASMPQEEQELVVTIPKNSHKKGAKLAALQGS EQLAALSQGPISKPKRKREKKEKKKKRKAEKHRGRAGADEDDKGPRAPRPPQPKKSKKASGSGGGSAALGPSGFGPSGGSGTKLPKKATKTAPPALPTGYDSEEE **QLINSTKKPPKKANEKTESSSAQQVAVSRLSASSSSSDSSSSSSSSSSSDTSDSDSG**

>BRD3 H SEOID#AA 129

K Q A Q Q KKA PAKKANSTTTA GRQLKKGGKQASASYDSEEEE GLPMSYDEKRQLSLDINRLPGEKLGRVVHIIQSREPSLRDSNPDEIEIDFETLKPTTLRELERYVKS PVPPAAAPPPPATPIVPVVPPTPPVVKKKGVKRKADTTTPTTSAITASRSESPPLSDPKQAKVVARRESGGRPIKPPKKDLEDGEVPQHAGKKGKLSEHLRYCDSILR EMLSKKHAAYAWPFYKPVDAEALELHDYHDIIKHPMDLSTVKRKMDGREYPDAQGFAADVRLMFSNCYKYNPPDHEVVAMARKLQDVFEMRFAKMPDEPVEA PALPAPAAPMVSKGAESSRSSEESSSDSGSSDSEEERATRLAELQEQLKAVHEQLAALSQAPVNKPKKKKEKKEKKEKKKDKEKEKEKHKVKAEEEKKAKVAPPA FNTMFTNCYIYNKPTDDIVLMAQALEKIFLQKVAQMPQEEVELLPPAPKGKGRKPAAGAQSAGTQQVAAVSSVSPATPFQSVPPTVSQTPVIAATPVPTITANVTSV MSTATTVAPAGIPATPGPVNPPPPEVSNPSKPGRKTNQLQYMQNVVVKTLWKHQFAWPFYQPVDAIKLNLPDYHKIIKNPMDMGTIKKRLENNYYWSASECMQD CLQKKQRKPFSASGKKQAAKSKEELAQEKKKELEKRLQDVSGQLSSSKKPARKEKPGSAPSGGPSRLSSSSSSSSSSSSSSSSDSSDSE

>BRD4 H SEQID#AA 130

MDMGTIKKRLENNYYWNAQECIQDFNTMFTNCYIYNKPGDDIVLMAEALEKLFLQKINELPTEETEIMIVQAKGRGRGRKETGTAKPGVSTVPNTTQASTPPQTQT PQPNPPPVQATPHPFPAVTPDLIVQTPVMTVVPPQPLQTPPPVPPQPPPAPAPQPVQSHPPIIAATPQPVKTKKGVKRKADTTTPTTIDPIHEPPSLPPEPKTTKLGQR SNCYKYNPPDHEVVAMARKLQDVFEMRFAKMPDEPEEPVVAVSSPAVPPTKVVAPPSSSDSSSDSSSDSSSTDDSEEERAQRLAELQEQLKAVHEQLAALSQPQ RESSRPVKPPKKDVPDSQQHPAPEKSSKVSEQLKCCSGILKEMFAKKHAAYAWPFYKPVDVEALGLHDYCDIIKHPMDMSTIKSKLEAREYRDAQEFGADVRLMF MSAESGPGTRLRNLPVMGDGLETSQMSTTQAQAQPQPANAASTNPPPPETSNPNKPKRQTNQLQYLLRVVLKTLWKHQFAWPFQQPVDAVKLNLPDYYKIIKTP

QNKPKKKEKDKKEKKKEKHKRKEEVEENKKSKAKEPPPKKTKKNNSSNSNVSKKEPAPMKSKPPPTYESEEEDKCKPMSYEEKRQLSLDINKLPGEKLGRVVHIIQ SREPSLKNSNPDEIEIDFETLKPSTLRELERYVTSCLRKKRKPQAEKVDVIAGSSKMKGFSSSESSSSESSSSDSEDSETGPA

>BRDT H SEQID#AA 131

KADTTTPATSAVKASSEFSPTFTEKSVALPPIKENMPKNVLPDSQQQYNVVETVKVTEQLRHCSEILKEMLAKKHFSYAWPFYNPVDVNALGLHNYYDVVKNPMD LGTIKEKMDNQEYKDAYSFAADVRLMFMNCYKYNPPDHEVVTMARMLQDVFETHFSKIPIEPVESMPLCYIKTDITETTGRENTNEASSEGNSSDDSEDERVKRLA DKLGRVVHIIQSREPSLSNSNPDEIEIDFETLKASTLRELEKYVSACLRKRPLKPPAKKIMMSKEELHSQKKQELEKRLLDVNNQLNSRKRQTKSDKTQPSKAVENVS EHLQTVKNISPLQILPPSGDSEQLSNGITVMHPSGDSDTTMLESECQAPVQKDIKIKNADSWKSLGKPVKPSGVMKSSDELFNQFRKAAIEKEVKARTQELIRKHLEQ MSLPSRQTAIIVNPPPFEYINTKKNGRLTNQLQYLQKVVLKDLWKHSFSWPFQRPVDAVKLKLPDYYTIIKNPMDLNTIKKRLENKYYAKASECIEDFNTMFSNCYL YNKPGDDIVLMAQALEKLFMQKLSQMPQEEQVVGVKERIKKGTQQNIAVSSAKEKSSPSATEKVFKQQEIPSVFPKTSISPLNVVQGASVNSSSQTAAQVTKGVKR RLSESSSSSSSSSSSSSSDLSSSDSSDSSDSESEMFPKFTEVKPNDSPSKEHVKKMKNECILPEGRTGVTQIGYCVQDTTSANTTLVHQTTPSHVMPPNHHQLAFNYQEL KLOEQLKAVHQOLQVLSQVPFRKLNKKKEKSKKEKKKEKVNNSNENPRKMCEQMRLKEKSKRNQPKKRKQQFIGLKSEDEDNAKPMNYDEKRQLSLNINKLPG NTKELKASQENQRDLGNGLTVESFSNKIQNKCSGEEQKEHPQSSEAQDKSKLWLLKDRDLARPKEQERRREAMVGTIDMTLQSDIMTMFENNFD

>ZC1_H_SEQID#AA_132

PSSSQPTPTMSPQTPQDKLTANETQSASSTLQKHKSSSSFTPFIDPRLLQISPSSGTTVTSVVGFSCDGMRPEAIRQDPTRKGSVVNVNPTNTRPQSDTPEIRKYKKRFN PVSRSHSFSDPSPKFAHHHLRSQDPCPPSRSEVLSQSSDSKSEAPDPTQKAWSRSDSDEVPPRVPRTTSRSPVLSRRDSPLQGSGQQNSQAGQRNSTSSIEPRLLWER VEKLVPRPGSGSSSGSSNSGSQPGSHPGSQSGSGERFRVRSSSKSEGSPSQRLENAVKKPEDKKEVFRPLKPAGEVDLTALAKELRAVEDVRPPHKVTDYSSSSEESG ITDEEDDDVEQEGADESTSGPEDTRAASSLNLSNGETESVKTMIVHDDVESEPAMTPSKEGTLIVRQSTVDQKRASHHESNGFAGRIHLLPDLLQQSHSSSTSSTSSS KYERIKFLVIALKSSVEVYAWAPKPYHKFMAFKSFGELVHKPLLVDLTVEEGORLKVIYGSCAGFHAVDVDSGSVYDIYLPTHVRKNPHSMIQCSIKPHAIIILPNTD MANDSPAKSLVDIDLSSLRDPAGIFELVEVVGNGTYGQVYKGRHVKTGQLAAIKVMDVTEDEEEEIKLEINMLKKYSHHRNIATYYGAFIKKSPPGHDDQLWLVM YRSDLWSCGITAIEMAEGAPPLCDMHPMRALFLIPRNPPRLKSKKWSKKFFSFIEGCLVKNYMQRPSTEQLLKHPFIRDQPNERQVRIQLKDHIDRTRKKRGEKDE TEYEYSGSEEEEEEVPEOEGEPSSIVNVPGESTLRRDFLRLOOENKERSEALRROOLLOEOOLREOEEYKROLLAEROKRIEOOKEORRRLEEOORREREARROOER RPHPQHSQQPPPPQQERSKPSFHAPEPKAHYEPADRAREVEDRFRKTNHSSPEAQSKQTGRVLEPPVPSRSESFSNGNSESVHPALQRPAEPQVQWSHLASLKNNVS EFCGA GSITDLVKNTK GNTLKEDWIA YISREIL RGLAHLHIHHVIHRDIK GQNVLLTENA EVKLVDFGVSA QLDRTVGRRNTFIGTPYWMA PEVIA CDENPDA TYD SEIL CAAL WGVNLL VGTESGLMLLDRSGQGK VYPLINRRRFQQMDVLEGLNVLVTISGKKDKLRVYYLSWLRNKILHNDPEVEKKQGWTTVGDLEGCVHYKVV GMELLVCYEDEGVYVNTYGRITKDVVLQWGEMPTSVAYIRSNQTMGWGEKAIEIRSVETGHLDGVFMHKRAQRLKFLCERNDKVFFASVRSGGSSQVYFMTLG **EORRREQEEKRRLEELERRRKEEEERRRAEEEKRRVEREQEYIRRQLEEEQRHLEVLQQQLLQEQAMLLECRWREMEEHRQAERLQRQLQQEQAYLLSLQHDHR**